

**Exploring the attitudes and perceptions
of parents and healthcare stakeholders
to accessing newborn screening for
hearing loss in Port Harcourt, Nigeria:
A qualitative study**

**A Thesis Submitted for the
Degree of Doctor of Philosophy**

By

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Abstract

Background: Hearing loss is a major global public health challenge, with over 466 million people affected worldwide, including 34 million children. Early detection through newborn hearing screening (NHS) is critical for timely intervention, yet such services remain largely unavailable in low- and middle-income countries, including Nigeria. Despite evidence supporting the effectiveness of early hearing detection and intervention, uptake of NHS in Nigeria is limited. This study explored the attitudes and perceptions of parents and healthcare stakeholders towards accessing newborn hearing screening in Port Harcourt, Nigeria, with the aim of understanding the socio-cultural, institutional, and economic factors influencing participation.

Methods: An interpretivist qualitative research design was employed to capture experiences and meanings from 25 purposively selected participants, including twenty parents and five healthcare stakeholders. Semi-structured interviews were conducted at the University of Port Harcourt Teaching Hospital between June and July 2022. Data were analysed using reflexive thematic analysis to identify recurrent themes and interpret the patterns of perception and behaviour influencing access to screening.

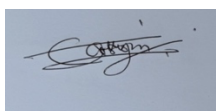
Findings: Four overarching themes emerged: “Understanding and Community Perceptions,” “Contradictory and Complex Views,” “Factors in Access,” and “Promoting Access.” Major subthemes under these categories included cultural and religious beliefs framing hearing loss as a spiritual or moral punishment, leading to stigma and delayed health-seeking. Economic hardship, lack of awareness, inadequate infrastructure, and absence of national policy were identified as key barriers, albeit participants expressed openness to screening when made accessible and affordable.

Conclusion and Recommendation: Access to newborn hearing screening in Nigeria is shaped by cultural beliefs, socio-economic constraints, and institutional limitations. Improving access requires culturally sensitive health education, inclusion of NHS within routine maternal and child health services, national policy development, and community engagement. These findings contribute context-specific insights to strengthen early hearing detection and intervention in low-resource settings.

Declaration

I declare that the research in this thesis is the author's work and submitted for the first time to the Post Graduate Research Office at Brunel University London. The study was originated, composed and reviewed by the mentioned author in the Department of Health Sciences, College of Health, Medicine and Life Sciences, Brunel University London, UK. All information derived from other works has been referenced and acknowledged.

Chisom Jolly Nwankwo

A handwritten signature in black ink, appearing to read 'Chisom', with a stylized flourish underneath.

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List of Abbreviations

AABR	Automated auditory brainstem response
AI	Artificial intelligence
BCC	Behavioural change communication
BFHI	Baby-Friendly Hospital Initiative
BHCPF	Basic Health Care Provision Fund
CBR	Community-based rehabilitation
CEHL	Congenital early-onset hearing loss
CMD	Chief Medical Director
CNO	Chief Nursing Officer
CPD	Continuous professional development
CRPD	UN Convention on the Rights of Persons with Disabilities
DHIS2	District Health Information System 2
EHDI	Early hearing detection and intervention
ENT	Ear, nose, and throat
F2F	Face-to-Face
HBM	Health belief model
HCP	Healthcare professional
HEFAMAA	Health Facility Monitoring and Accreditation Agency
HI	Hearing Impairment
HIS	Health information systems
HL	Hearing loss
IMNCH	Integrated maternal, newborn and child health
LMICs	Low- and middle-income countries
M&E	Monitoring and evaluation
MDCN	Medical and Dental Council of Nigeria
NGO	Non-governmental organisation
NHIA	National Health Insurance Authority
NHIS	National Health Information System
NHIS	National Health Insurance Scheme
NHL	Newborn hearing loss
NHMIS	National Health Management Information System
NICU	Neonatal intensive care unit
NNHS	Neonatal hearing screening
NS	Newborn screening

NSHDP III	National Strategic Health Development Plan
OAE	Otoacoustic emissions
ONJ	Osteonecrosis of the jaw
PHC	Primary healthcare centre
PIS	Participant information sheet
SDG	Sustainable Development Goal
SEM	Socio-ecological model
SSA	Sub-Saharan Africa
TCM	Traditional and complementary medicine
TPB	Theory of planned behaviour
TRA	Theory of reasoned action
UHC	Universal health coverage
UN	United Nations
UNHS	Universal neonatal hearing screening
UPTH	University of Port Harcourt Teaching Hospital
WHO	World Health Organization

Glossary of Key Terms and Concepts

Acquired Hearing Loss: Hearing loss that develops after birth as a result of an injury or disease.

Aural Rehabilitation: Treatment of people with acquired hearing loss to help them communicate more effectively, including hearing aids, auditory training, speech reading, and counselling.

Automated auditory brainstem response (AABR): A specialised hearing screening device that delivers information on the outer/middle ear, cochlea, and auditory pathway up to the brainstem.

Average Hearing Level: The average of hearing thresholds measured in decibels (dB) in the better hearing ear at frequencies of 500, 1000, 2000, and 4,000 Hz in the better hearing ear.

Congenital Hearing Loss: Hearing loss that began before or after birth as a result of prenatal or perinatal pathologic circumstances.

Critical or Sensitive Phase: The early years of a child's development are the most conducive to the acquisition of optimal speech and language skills.

Developing Countries: Refers to the 164 countries categorised as such by the World Health Organization, but which range in income from poor to high, according the World Bank classification.

Early-Onset Hearing Loss: Within the first 28 days of life, there is a reduction in hearing sensitivity.

Hearing Impairment: In this study, the phrase “hearing loss” is used interchangeably with the clinical categorisation of “anatomical deficit in hearing.” When it affects the external or middle ears, hearing impairment is conductive; when it affects the cochlea and the eighth nerve all the way to the brain, it is sensorineural. When both conductive and sensorineural kinds are involved, the result is mixed.

Infant Hearing Screening: The use of objective hearing tests on infants during their first year of life.

Mild Hearing Loss: 26 -40 dB HL is the average hearing level. WHO (2021) classifies this range as "Slight" or "Grade 1" hearing impairment.

Minimal Hearing Loss: This phrase refers to mild or moderate bilateral hearing loss (typically 16 - 40 dB HL) as well as unilateral hearing loss of any severity.

Moderate Hearing Loss: Hearing levels range from 41 to 70 decibels (dB HL). This is in contrast to the WHO's (2021) range of 31-60 dB HL for children aged 5 to 15, which is classed as "Grade 2."

Newborn Hearing Screening: The use of objective hearing screening tests on newborns at delivery or soon after, but no later than the first 28 days of life. The terms "neonatal hearing screening" and "prenatal hearing screening" are interchangeable.

Otitis Media: The most frequent ear infection in children and a leading cause of child morbidity.

Otoacoustic Emission: A low-level sound released by the cochlea, either spontaneously or in response to an auditory stimulation. OAEs, in particular, provide information on the function of the outer hair cells.

Permanent Hearing Loss: Hearing loss that has long-term communication consequences is commonly referred to as sensorineural hearing loss. If conductive hearing loss is caused by an anatomical abnormality in the middle ear or persistent otitis media, it might be irreversible. This term is used interchangeably with sensorineural hearing loss in this investigation.

Profound Hearing Loss: In contrast to the WHO's (2021) range of 81 dB HL and above ("Grade 4"), the average hearing level is above 90 dB HL.

Protocol: An accurate and detailed plan for administering a screening test or programme.

Severe Hearing Loss: In comparison to the WHO's (2021) range of 61-80 dB HL ("Grade 3"), the average hearing level is 71-90 dB HL.

Slight Hearing Loss: 16 to 25 dB HL is the average hearing level. This range is considered normal ("Grade 0") by the WHO (2021).

CHAPTER 1

Introduction

1.1 Background on Hearing Loss (HL) and Hearing Impairment HI)

The World Health Organization (WHO, 2021) considers HL and HI (partial or complete inability to hear, encompassing a range of aetiologies, including congenital, genetic, infectious, environmental, and traumatic factors) to comprise a substantial public health concern, cutting across geographical, economic, and demographic divides. HL undermines communication, and is linked to secondary impacts encompassing social isolation, reduced academic (and subsequent professional) attainment, unemployment, and overall reduced quality of life (Wilson *et al.*, 2017).

The global incidence of HL is increasing at a concerning pace (Figure 1), from 360 million in 2010 (including 32 million children) to 466 million by 2020 (over 6% of the total global population) (WHO, 2019a, 2019b, 2019c). Alarming, an estimated 34 million children (7.3% of those affected) are experiencing debilitating HL, which the WHO defines as HL above 40 dB in the better hearing ear for adults, and greater than 30 dB for children (WHO, 2019a, 2019b, 2019c). In the absence of effective global intervention, projections indicate that by 2030, 630 million individuals may experience HL, with this number potentially escalating to over 900 million by 2050 (Looker, 2017; WHO, 2021).

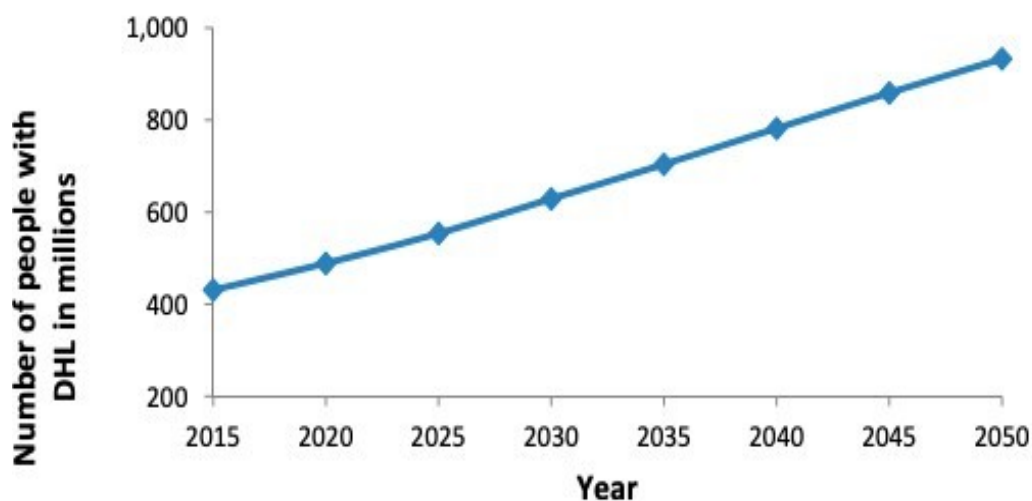


Figure 1: Global increase (estimated and projected) of number of people with disabling HL

Source: Neumann *et al.* (2019)

Low- and middle-income countries (LMICs) endure a disproportionate burden due to HL, reflecting inadequate access to early detection, audiological services, and rehabilitation. The

effects of HL in Sub-Saharan Africa (SSA) are especially significant. This region, together with South Asia and the Asia-Pacific, exhibits the highest prevalence of undiagnosed and untreated HL, primarily attributable to interrelated factors of inadequate health infrastructure, insufficient newborn screening (NS) programmes, and cultural obstacles to accessing care (Olusanya *et al.*, 2014; Neumann *et al.*, 2019). In Africa, more than 80% of individuals with HL lack access to hearing healthcare, and supportive technologies like hearing aids are either rare or too expensive (WHO, 2021).

The hearing health crisis in Nigeria is a significant yet underreported concern. With a population over 200 million, a considerable proportion of individuals are impacted by preventable or treatable types of HL. Epidemiological research reveal that over 7 million Nigerians suffer from debilitating HL; nonetheless, national policy responses are disjointed and inadequately executed (Nwawolo *et al.*, 2018). The Nigerian healthcare system has faced challenges in implementing sustainable neonatal hearing screening (NNHS), despite growing advocacy from both local and foreign players. The lack of standardised Universal NNHS (UNHS) and insufficient audiological training hinder early detection and prompt intervention (Olusanya *et al.*, 2019).

The situation in Port Harcourt, a significant metropolitan hub in Nigeria's Niger Delta, reflects the overarching national trend, while posing distinct localised obstacles. Industrial operations, urban congestion, and ambient auditory pollution raise the likelihood of HL in both children and adults in this site. Regional research has indicated a deficiency of qualified staff, insufficient public knowledge, and inadequate infrastructure to facilitate even fundamental audiological services (Nduka, Aitafo and Nduka, 2014). Although Port Harcourt hosts relatively high numbers of secondary and tertiary healthcare institutions, as a major city, hearing screening is predominantly limited to tertiary referral cases, and lacks a systematic or widespread implementation, particularly for neonates.

Furthermore, cultural misunderstandings and stigma associated with HL sometimes result in delays in seeking assistance. Numerous families rely on conventional therapies or overlook initial indicators of HL, hence exacerbating the likelihood of timely intervention (Okoro *et al.*, 2020). The insufficient priority of hearing care in maternal and child health programmes by the government has led to limited integration of audiological services at the primary care level.

The life epoch of "infancy and early years" (clinically and operationally defined as under the age of five), of which the neonatal age (discussed below) is a part, is critically important to lifelong health and socioeconomic outcomes, entailing profound impacts from experiences and physiological factors that affect the rest of people's lives (Hessein *et al.*, 2015). Health

experiences during this time literally shape the brain and condition lifespan options, laying the foundation for lifelong well-being or illness (O'Donovan *et al.*, 2019). During early childhood, individuals ordinarily acquire and develop core abilities, including language, cognitive, motor, and psychosocial skills (Luft, 2018), which are foundational in subsequent educational development (Trinidad-Ramos *et al.*, 2010)

Extensive research has shown that childhood HI undermines development in these domains (Kushalnagar *et al.*, 2010; Khoza-Shangose and Harbinson, 2015; Ravi *et al.*, 2016). For instance, a two-year longitudinal study of neonates diagnosed with HI found that 40% of children had sub-average scores on the “Griffiths Mental Development Scale,” which is concerned with speech, hearing, and motor skills, and functional and social personal abilities (Paludetti *et al.*, 2012; Turchetta *et al.*, 2015).

1.2 Newborn Hearing Loss (NHL)

NHL is a major disabling health condition globally (Trinidad-Ramos *et al.*, 2010; Olusanya, 2011; Graham *et al.*, 2019; Patel, 2019; WHO, 2019a, 2019b, 2019c). HI causes a number of developmental disorders, such as delayed auditory, language, emotional, social and educational developments (Baraky *et al.*, 2012). The causes of HL or impairment can be congenital or acquired. These include some common specific infections that are preventable if identified early through NS and subsequently through other appropriate interventional measures such as rehabilitation and improving cognitive skills, including sign language and hearing aid fittings (Labaeka *et al.*, 2018; Luft, 2018). Ideally, NS for HL and developmental domains should begin no later than six months after birth. Table 1 summarises some of the key services expected for NS development (Olusanya, 2011; Akinola *et al.*, 2018).

Table 1: Services for NS and developmental domains

Birth	<1 month	<3 months	<6 months
<i>Parental information</i>	<i>Parental information</i>	<i>Paediatric audiology evaluation and diagnosis</i>	<i>Family counselling</i>
Educational leaflets and clarification on importance of NS	Educational leaflets and clarification on importance of NS	• Child and family history • Otoscopic inspection • Middle ear function • OAE	Information on assistive listening devices and other options (e.g., hearing aids and cochlear implants)
<i>Hospital-based inpatient screening (OAE/AABR)</i>	<i>Outpatient screening (OAE/AABR)</i>	• AABR • Frequency-specific tone bursts • Air and bone conduction • Sedation capability	<i>Medical evaluations</i>
For all newborns in NICE and WBN units	For home births and missed or repeat inpatient screening		Aetiological and diagnostic ophthalmologic, genetic, and developmental assessment
			<i>Paediatric audiology support</i>
			• Behavioural response audiometry • Hearing aid evaluation and fitting • Ongoing monitoring (especially for high-risk infants who passed screening tests)

Source: Olusanya (2015), Akinola *et al.* (2018)

Early years HI is regarded as clinically serious when it is persistent and reaches the extent of deprivation of normal auditory stimuli, resulting in slow speech and linguistic development (Neumann *et al.*, 2019). Neonatal and infant HI may be due to any combination of perinatal, congenital, environmental, biological, and genetic factors (Chen and Oghalai, 2016). It is often associated with Neonatal Intensive Care Unit (NICU) admission during the neonatal period, low birth weight, premature birth, asphyxiation, hypoxemia, hyperbilirubinemia and genetic inheritance (particularly from consanguineous parents), meningitis, rubella, ototoxic therapies and infections (Colella-Santos *et al.*, 2014; Grandpierre *et al.*, 2017). In many cases HL during infancy is temporary, but in the worst cases it can be a permanent disability, causing problems in linguistic and cognitive development, personal relations, and long-term socio-economic prospects (Palmer *et al.*, 2009; Chin *et al.*, 2013).

1.3 NHL Classification

1.3.1 Overview

Newborn hearing problems are classifiable by numerous features, including their essential type, the extent of damage, the initial onset time, aetiology, and speech and cognitive development consequences, as shown in Table 2 (Steinberg *et al.*, 2007; Kang, Jeong and Kim, 2012; Paludetti *et al.*, 2012). As shown in row 2, hearing issues can be analysed in terms of *conductive*, *sensorineural*, *auditory (central)*, and *mixed* varieties (Namwongprom *et al.*, 2015).

Table 2: HL classification

Degree	Mild (21-40 dB); Moderate (41-70 dB); Severe (71-90 dB); Profound (>90 dB)
Type	Conductive; Sensorineural; Auditory; Mixed processing disorders
Onset time	Prenatal; Neonatal; Postnatal
Aetiology	Congenital (genetic or not genetic); Acquired
Speech development	Prelingual; Postlingual

Source: Palludetti et al. (2012).

Numerous acquired or congenital factors can cause conductive HL and sensorineural HL, as presented in Table 3. Permanent sensorineural HL may be due to many prolific causes, which are harder to pinpoint than the causes of conductive HL. Both sensorineural and permanent HL in children are commonly linked to cognitive and learning barriers, reflected in slower and impeded language development and problems in behaviour (Kirman and Yildirim Sari, 2013; Sarchenko *et al.*, 2015; O'Donovan *et al.*, 2019).

Table 3: Classification of congenital and acquired HL factors

Congenital	Acquired
Conductive hearing loss	
• Aural atresia • Microtia • Ossicular chain anomalies • Syndromic and complex craniosynostosis • (Aspert, Crouzon, Saethre-Chotzen syndromes)	• Foreign body (e.g., cerumen) • Ear canal exostoses • External otitis • Middle ear infection (acute/ chronic suppurative otitis, cholesteatoma) • Middle ear infection • Ossicular chain disruption • Ear barotraumas • Tympanic membrane perforation
Sensorineural hearing loss	
• Syndromic disease (Alport, Usher, Waardenburg syndromes etc.) • Genetic non-syndromic hearing loss (Connexine 26-30, mitochondrial diseases, other genetic disorders) • <i>In utero</i> infections (cytomegalovirus, varicella, herpes, toxoplasmosis, syphilis, rubella, mumps, measles) • Perinatal hypoxia and prematurity • Hyperbilirubinemia • Ototoxic drug exposure during pregnancy • Anatomic abnormalities of cochlea or temporal bone • NICU recovery • Low Apgar scores	• Infections • Bacterial meningitis (<i>Haemophilus influenzae</i>) • Viral labyrinthitis (measles, mumps, rubella, parainfluenza) • Use of ototoxic drugs (cisplatin, aminoglycosides, furosemide) • Head or acoustic trauma • Autoimmune diseases (Cogan syndrome) • Radiation therapy for head and neck tumours • Chronic otitis media complications

Source: adapted from Palludetti *et al.* (2012).

1.3.2 Conductive

Conductive HL is attributable to mechanical sound transmission interference with regard to the middle and external ear. It is much more common in children than in adults, and it can be due to anatomical abnormalities (often congenital) or be acquired due to infections of the *otitis media* and associated inflammation (Ogwumike, Kaka and Adeniyi, 2012).

1.3.3 Sensorineural

Sensorineural HL is characterised by the lack of ability in the cochlea to transduce the vibrations of sound waves into neural impulses. This may also be acquired or congenital, and is often defined by the time of onset, as prenatal, neonatal, or postnatal. The most prolific

congenital abnormality among neonates is sensorineural HI (Ogwumike, Kaka and Adeniyi, 2012; Walker *et al.*, 2017).

1.3.4 Auditory

When the auditory system is functionally and structurally damaged by infections (e.g., cytomegalovirus, herpes, rubella, syphilis, and toxoplasmosis), it commonly results in acquiring permanent HL (Li *et al.*, 2016; Fowler *et al.*, 2017; UNICEF, 2019). Prior to the introduction of rubella inoculation for girls in the US (in 1969), cardiac abnormalities, cataracts, and sensorineural HI commonly presented as a triad; in many LMICs vaccination against rubella is not included in “recommended programmes of immunisation” (Fowler *et al.*, 2017; Jatto *et al.*, 2018).

1.3.5 Mixed

Mixed HL is any configuration combining the previous types (Walker *et al.*, 2017), and lastly the auditory processing disorders are brainstem or higher processing centre defects (i.e., neurological and cognitive) (Palludetti *et al.*, 2012).

1.4 Impacts of HL on Newborns

Newborns with acquired or congenital HL are frequently overlooked and may experience what has been described as a “silent handicap,” largely because they often appear physically typical and do not display overt signs of disability at birth (Fitzpatrick *et al.*, 2007). A newborn is formally defined as an infant from birth up to 28 completed days of life; this is the “neonatal” period, as per WHO classifications, during which early biological development is particularly rapid, and vulnerable to adverse health outcomes (WHO, 2014). HI during this critical neonatal period limits the newborn’s ability to detect and process auditory stimuli, thereby disrupting the earliest foundations of auditory perception that are essential for later speech and language development (Luft, 2018).

Although the functional consequences of HL may not be immediately visible in the neonatal period, undetected HI in newborns has profound and lasting implications. HL interferes with early neural auditory pathway development, which in turn contributes to delayed language acquisition, impaired cognitive development, and reduced social interaction later in life (Hessein *et al.*, 2015). These developmental delays often persist across the life course, increasing the risk of long-term educational underachievement, limited employment opportunities, socioeconomic disadvantage, and social marginalisation. Newborns who later grow up with unrecognised HI are also more vulnerable to neglect and abuse, including

physical and sexual harm, partly due to communication barriers and reduced ability to seek help or disclose maltreatment (Johnson *et al.*, 2015).

Despite the severity of the long-term consequences associated with HL, impairment in newborns is frequently under-recognised not only within families and communities but also among healthcare professionals (HCPs) and policymakers. This under-recognition occurs for several interrelated reasons, particularly in health systems where routine NNHS is not fully implemented or prioritised. In many settings, especially LMICs, clinical attention during the neonatal period is predominantly focused on visible or immediately life-threatening conditions such as prematurity, infection, respiratory distress, and congenital anomalies. As HL is an “invisible” disability, with no obvious physical markers at birth, it is often perceived as a lower clinical priority and is therefore not routinely assessed in the absence of structured screening programmes (Olusanya and Swanepoel, 2007; WHO, 2019a, 2019b, 2019c).

Additionally, HCPs may lack adequate training and awareness regarding early indicators of neonatal HL and its developmental implications. In the absence of UNHS, detection often relies on behavioural observation or parental concern, both of which are unreliable during the neonatal period. Studies have shown that clinicians may incorrectly assume that HL will become apparent later in infancy or early childhood, leading to delayed referral and diagnosis (Olusanya, Wirz and Luxon, 2008; Neumann *et al.*, 2019). Time constraints, high patient volumes, limited access to diagnostic equipment, and competing clinical priorities further contribute to missed opportunities for early identification, particularly in resource-constrained healthcare settings.

Policy-level factors also play a significant role in the under-recognition of neonatal HL. In some countries, hearing screening is not integrated into national maternal and child health policies, resulting in inconsistent implementation, lack of funding, and absence of clear referral pathways. This systemic neglect reinforces low clinical awareness and perpetuates the perception of HL as a non-urgent condition, despite strong evidence of its long-term impact on development and quality of life (WHO, 2019a, 2019b, 2019c).

When HL is not identified during the neonatal period, its cognitive, linguistic, and educational consequences accumulate over time. Delayed auditory stimulation disrupts early brain development and language acquisition, leading to persistent communication difficulties and reduced academic attainment. These challenges often translate into restricted access to mainstream education and limited vocational opportunities in adulthood, increasing the risk of lifelong socioeconomic disadvantage and poverty, particularly for individuals born into already marginalised or low-income households (Olusanya *et al.*, 2014; Sarchenko *et al.*, 2015). While

specialised educational and rehabilitative services for individuals with HI are sometimes perceived as a financial burden, evidence indicates that early identification and intervention beginning in the newborn period is highly cost-effective. Investment in early support reduces long-term societal costs associated with unemployment, welfare dependence, and reduced productivity, as many individuals with HI are able to participate fully and successfully in a wide range of occupations, particularly when appropriate support is provided to them early in life (Kirman and Yildirim Sari, 2013; O'Donovan *et al.*, 2019).

To prevent avoidable long-term consequences and to minimise the negative developmental, social, and economic impacts of HI, the earliest possible detection during the newborn period is essential. Early identification enables timely intervention, including amplification, medical management, and family-centred support, thereby maximising developmental outcomes (Olusanya *et al.*, 2007). In contrast, delayed detection of HI beyond the neonatal period is associated with more severe and entrenched difficulties, including reduced educational options, given that mainstream education systems rely heavily on auditory and spoken communication (Brush *et al.*, 2005). As a result, many national health systems now advocate for targeted or UNHS programmes, with increasing attention to identifying and addressing the barriers to effective NS for HL in order to improve early detection and long-term outcomes (Arnold *et al.*, 2006).

1.5 Stages of HL Prevention

Risk factors present during pregnancy, birth, and the neonatal period account for a substantial proportion of preventable HL in infants, contributing to nearly a fifth of avoidable childhood HI globally (McCreery *et al.*, 2016; Bk, 2017; WHO, 2019a, 2019b, 2019c). The WHO estimates that more than 60% of HL in children worldwide is preventable, with this proportion rising to approximately 75% in LMICs, compared with 49% in high-income countries (Neuman *et al.*, 2019). This disparity reflects both a higher burden of preventable risk factors and weaker health system responses in many LMICs. Indeed, evidence from specific LMIC contexts illustrates this pattern clearly.

In India, studies estimate that between 63% and 72% of childhood HL is attributable to preventable causes, including neonatal infections, low birth weight, birth asphyxia, and ototoxic medication exposure (Olusanya *et al.*, 2014; WHO, 2019a, 2019b, 2019c). Similarly, in Bangladesh and Pakistan, preventable and perinatal factors account for over two thirds of childhood HL, largely driven by high rates of neonatal jaundice, prematurity, sepsis, and untreated infections such as meningitis (Islam *et al.*, 2018; Rizvi *et al.*, 2020). In SSA, the burden is comparable or higher. Studies from Kenya and Uganda report that between 60%

and 80% of childhood HL is linked to preventable or treatable causes, particularly infectious diseases, birth complications, and limited access to early diagnosis and intervention services (Bright *et al.*, 2017; Mulwafu *et al.*, 2018).

Nigeria reflects many of these LMIC-specific challenges. Available evidence suggests that preventable causes account for approximately 70–80% of childhood HL in Nigeria, with major contributors including severe neonatal hyperbilirubinemia, birth asphyxia, prematurity, meningitis, measles, and the widespread use of ototoxic medications such as aminoglycoside antibiotics without adequate monitoring (Olusanya, 2015; Akinpelu *et al.*, 2018). Neonatal jaundice alone has been identified as a leading cause of childhood HL in Nigeria, contributing to up to 30% of cases in some hospital-based studies, a proportion significantly higher than that reported in high-income countries (Olusanya *et al.*, 2017). These findings are closely linked to gaps in maternal and newborn care, delayed presentation to health facilities, limited NS services, and uneven access to skilled birth attendance.

As illustrated in Figure 2, viral and bacterial infections such as rubella and meningitis account for nearly one third of preventable childhood HL globally, while exposure to ototoxic medicines contributes approximately 4% (Neuman *et al.*, 2019). Perinatal conditions, including hypoxaemia, low birth weight, prematurity, and neonatal hyperbilirubinemia, collectively account for a further 17% of preventable cases. In Nigeria and similar LMICs, the relative contribution of these perinatal factors is often higher due to inadequate neonatal intensive care facilities, limited monitoring of high-risk infants, and delayed referral pathways.

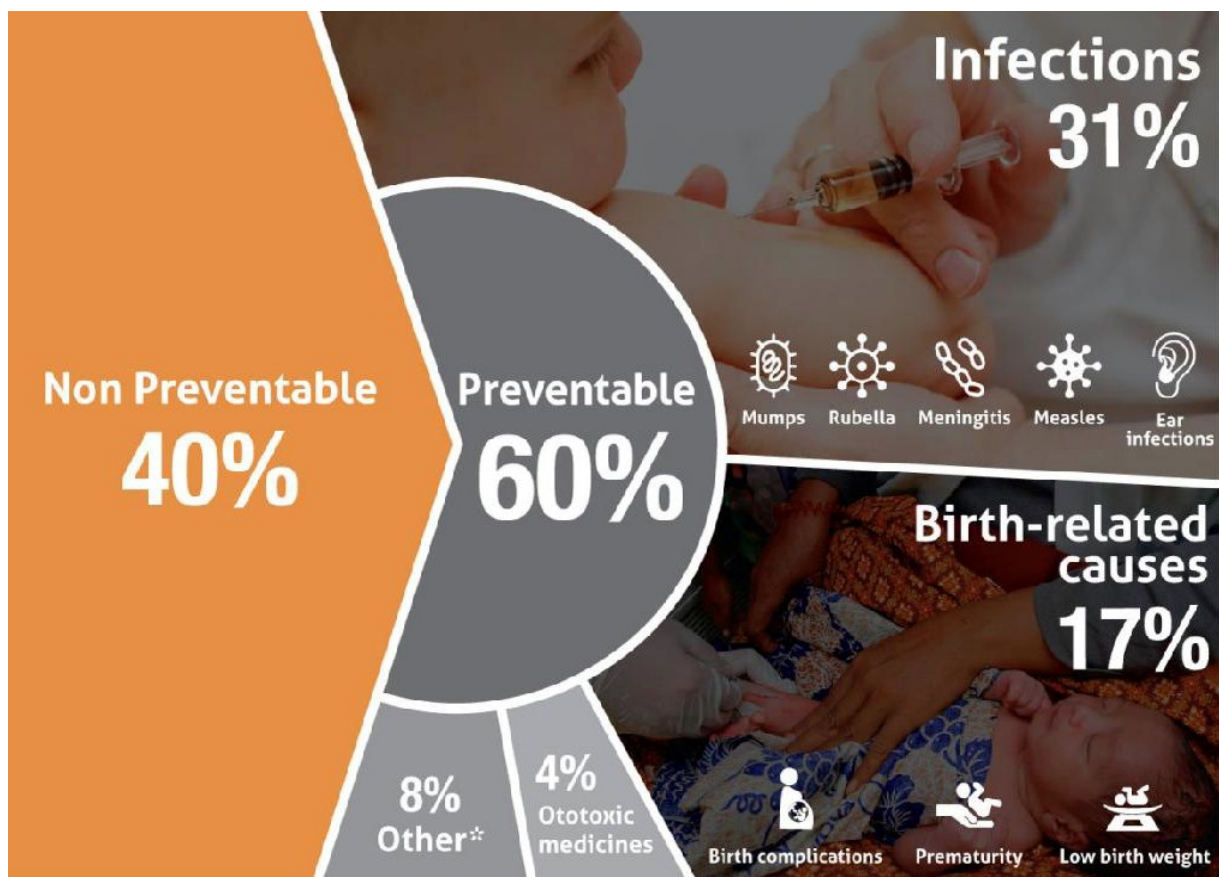


Figure 2: Preventable HL and causes

Source: WHO (2019a, 2019b, 2019c)

Overall, studies consistently indicate that more than half of childhood HL (approximately 60% globally and up to 75% in LMICs) is theoretically preventable through effective primary, secondary, and tertiary interventions (Al-Sulaiman *et al.*, 2015; WHO, 2019a, 2019b, 2019c). In the Nigerian context, strengthening antenatal care, improving infection prevention and immunisation coverage, ensuring safe use of ototoxic medications, and expanding access to NNHS and early intervention services are critical strategies for reducing the disproportionate burden of preventable childhood HL.

1.5.1 Primary Prevention

Primary prevention aims to prevent the initial occurrence of NHL, such as avoidance of drug regimens with ototoxicity, rubella immunisation, enhanced obstetrics, and general factors like improved living conditions and personal hygiene (Vos *et al.*, 2015). Naturally, primary prevention necessitates in-depth knowledge with high accuracy about the cause and risk factors involved in particular cases, but this is complicated in LMICs due to the lack of research and adequate primary prevention services on infant HL and healthcare generally, which inhibits the application of primary prevention measures (Wroblewska-Seniuk *et al.*, 2017). The

relatively deprived nature of maternal and childcare in LMICs, and the patchwork nature of public health coverage (e.g., vaccination programmes) makes the situation more complex than in developed nations (Crocket *et al.*, 2006; Moawad, Abdallah and Ali, 2016; Chung and Park, 2018).

1.5.2 Secondary Prevention

Secondary prevention aims to avoid NHL escalating to disability by detecting hearing problems as early as possible through screening and delivering appropriate interventions where necessary to address any issues (Thackeray and Magnusson, 2016; Bailey, Skinner and Warren, 2025). In addition to being an essential sequel to primary prevention, secondary prevention is an autonomous requirement in its own right, particularly in developing countries where primary methods are more difficult. Congenital Early-Onset Hearing Loss (CEHL) screening seeks to determine cases requiring more intensive follow-up due to obvious problems (i.e., test-positives) and cases where no immediate action is necessary (Holte *et al.*, 2012). Additionally, later screening over the long-term is ideal, and is particularly advisable (especially for one-time test-negatives), given that it is very difficult to test hearing accurately for infants prior to the age at which they begin talking (the lack of speech development is often the catalyst for parents seeking medical attention) (Ptok, 2011).

Screening generally leads to one of four specific categorisations:

- Accurate identification of CEHL infants (True-Positives)
- False identification of CEHL infants (False-Positives)
- Accurate identification of non-CEHL infants (True-Negatives)
- False identification of non-CEHL infants (False-Negatives)

An optimised test for hearing screening would be easy and simple for practitioners to apply (e.g., general healthcare workers such as community nurses), who could thus extend effective screening to under-served communities (such as remote rural settings in Nigeria). Despite the easy nature of the screening, it should also be accurate and valid as possible, and of course safe (Olusanya *et al.*, 2011). According to the UK Screening Committee's (2019) *2017 Report*, parameters of reliability include sensitivity (i.e., accurately detecting children with HL), specificity (not selecting most non-CEHL infants as failing).

1.5.3 Tertiary Prevention

Tertiary prevention mainly pertains to the management of diagnosed long-term (or permanent) HL cases with rehabilitation, which involves utilising all available resources to mitigate barriers to the normal functioning and social integration of hearing-impaired people (Paludetti *et al.*,

2012; Treadwell *et al.*, 2014). NHL tertiary prevention aims to circumvent the disabling features of HL to enable people to live as non-hearing members of society as far as possible. Examples of tertiary prevention may include the use of cochlear implants or hearing aids, special educational facilitation, the involvement of family-oriented health and support services, and support for social integration using vocational, educational, social, and environmental resources (WHO, 2019a, 2019b, 2019c).

Among children with particular health requirements (e.g., children in NICU), those with HI need special health services (Nightengale, 2018). Their situation is thus made more difficult in the case of developing countries, where basic health resources are severely stretched and lack of awareness of the risks and interventions available. Many studies have noted the need for more targeted studies on the particular implications of children's HI in developing countries (Olusanya, Luxon and Wirz, 2005; Danhauer and Johnson, 2006; Olusanya, Ruben and Paving, 2006; Olusanya *et al.*, 2007; Govender and Khan, 2017; Kasper *et al.*, 2017), it is clear that developing countries' poor health coverage, parental perceptions and socio-economic conditions severely limited treatment possibilities and options available (Goedert *et al.*, 2011; Holte *et al.*, 2012) There are few specialised clinics for auditory care or the educational needs of children with HI, and for people with disabilities generally, which particularly inhibits their integration with mainstream society and peers (Rakhshanfadaee and Salehi, 2016; Wolfe and Smith, 2016).

1.6 Screening Models for NHL

1.6.1 Hospital Models

Most neonates are born in hospitals, thus applying screening in hospitals offers the most cost-effective and blanket coverage for screening programmes. Infant screening for hearing problems has been successfully applied in maternity hospitals (Patel, 2019; Bailey, Skinner and Warren, 2025) community hospitals (Olusanya, 2008; Maqbool, 2015), specialist general or district hospitals (Singh *et al.*, 2015; Graham *et al.*, 2019), public tertiary and teaching facilities, and private hospitals (Singh, 2015; Wood *et al.*, 2015) In most of these programmes, neonates are screened within the first 48 postnatal hours, and (more consistently and diligently) before discharge from the hospital. Due to the high prevalence of false-positive test results during the first 24 hours after birth, due to amniotic fluid in the ears or vernix plugs, screening is not advised until the second day (Walsh *et al.*, 2015).

Ideally screening should be universal, but in more resource-restricted contexts it may be specifically implemented for babies deemed to be particularly at risk, due to the risk factors mentioned previously (Patel, 2019). Most hearing screening programmes are particular

initiatives, but it could be germane in some context to integrate them with existing, general programmes, such as the “Baby-Friendly Hospital Initiative” (BFHI) (Olusanya, 2015), a worldwide initiative sponsored by WHO and UNICEF to promote exclusive breast-feeding for infants under the age of six months; due to its cultural amenability, it has been extremely popular and effective among women in developing countries (UNICEF, 2019).

1.6.2 Community-Based Models

In Nigeria, a substantial proportion of births continue to take place outside formal hospital settings. Evidence suggests that approximately 60–70% of deliveries occur at home or in community-based settings, including traditional birth attendant and faith-based facilities, rather than in hospitals or formally regulated health facilities (Adewuyi *et al.*, 2019; Okonofua *et al.*, 2019). Adewuyi *et al.* (2019), using nationally representative data, highlight that the place of delivery is strongly influenced by socioeconomic status, maternal education, geographical location, and access to skilled healthcare services, with rural and disadvantaged populations being significantly more likely to experience non-facility births. While these settings may offer cultural familiarity and perceived accessibility, concerns remain regarding the safety and quality of care provided, particularly where deliveries are attended by unskilled or semi-skilled providers and lack access to emergency obstetric services.

In many LMICs, including Nigeria, informal or non-institutional delivery settings are often characterised by limited infection control measures, inadequate monitoring of labour and neonatal well-being, and delayed referral in the event of complications, all of which increase the risk of adverse maternal and neonatal outcomes (McPherson *et al.*, 2012). These risks are particularly salient for conditions that require early detection and intervention, such as neonatal complications, birth asphyxia, and congenital or acquired conditions including HL. Consequently, while community-based and home deliveries remain common, their safety is highly dependent on the availability of skilled attendants, effective referral systems, and postnatal follow-up care.

At the international policy level, however, there has been a shift away from an exclusively medicalised, illness-focused model of childbirth towards a more woman-centred approach that recognises childbirth as a physiological process for many women. Global guidance supports non-hospital births when they are the informed preference of the mother, and when appropriate safeguards are in place to protect the health of both the mother and the newborn (Daniel-Choo and Jareen-Meinzen-der, 2011; Wood *et al.*, 2015). Evidence from high-income and selected middle-income settings indicates that planned home or community-based deliveries can be safe for low-risk pregnancies when attended by skilled HCPs and supported

by functional health systems with clear pathways for escalation and emergency care (Wood *et al.*, 2015).

Within the Nigerian context, Olusanya (2011) similarly argues that community-based delivery models should not be dismissed outright, but rather strengthened through integration with formal health services, improved training of birth attendants, and enhanced postnatal surveillance. Such integration is particularly important for ensuring early identification of neonatal conditions that are not immediately apparent at birth, including HI.

However, while such “options” are increasingly chosen in developed countries, they are often the only available default choice for poor women in developing countries, particularly in rural areas (Chung and Park, 2018). High attrition can be expected in programmes that require parents to go to health settings for unfamiliar screening programmes. Additionally, home screening, which has been tentatively attempted in some developed countries (Colgan *et al.*, 2012; Chinwe, 2018) *may* be impractical in the context of Nigeria due to natural terrain and communications problems, particularly for rural areas.

1.7 NS for HL Programme

1.7.1 Overview

Normal clinical routine examinations and even behavioural observations are not reliable in detecting HI among children. Parents may often suspect that their infant has hearing difficulties due to poor responses to verbal/ sound stimuli, but in many cases, they are also oblivious (Harrison *et al.*, 2016). It can be difficult for anyone to detect HI without dedicated examinations to determine this for up to 18 months. The first signals that can prompt parental suspicion are typically slow development in language (i.e., speech) (Wolfe and Smith, 2016). Without dedicated screening for hearing problems among infants, most cases are not detected before the age of two years, and the child could be as old as 6 years before being diagnosed with long-term HL from birth or the neonatal period (Patel, 2019).

1.7.2 Interventions Using Otoacoustic Emissions (OAE) and Automated Auditory Brainstem Response (AABR) for NNHS

The WHO has long been attempting to improve the prevention, diagnosis, and treatment of disabling HL, and in 1995 issued a resolution calling on member states (which now includes Nigeria) for national agendas to address the major causes and to increase early detection in infants, toddlers, and children in addition to the elderly (WHO, 1995; Olusanya *et al.*, 2007). However, after 1995 policies targeting hearing programmes were developed in only 32 countries, excluding Nigeria (Olusanya *et al.*, 2007; Looker, 2017). Thus, the World Health

Assembly (WHA, 2019) issued a resolution for all member states to nationally make plans and provisions for the prevention and control of the major causes of preventable HL under the framework of primary health care for prevention and early detection of HL in toddlers, babies, children, as well as adults (WHO, 2019a, 2019b, 2019c). Although the resolution did not specify how to achieve the goal of early detection, several countries have found that UNHS employing OAE and AABR before hospital discharge has been helpful (Davis *et al.*, 1997; Joint Committee on Infant Hearing, 2007; Olusanya *et al.*, 2007).

The education of parents in signs and symptoms to watch out for is a poor aid in early detection (Johnson *et al.*, 2015). What is required is reliable, valid, objective, safe, automated, and simple screening, using technology such as AABR and OAE, which have facilitated much earlier detection of CEHL from birth, especially during the first three months (Ptok, 2011; Wake *et al.*, 2015). This enables earlier intervention by the age of six months, which can greatly mitigate the negative impacts of HL on speech and subsequently language development (Joint Committee on Infant Hearing, 2019).

OAE and AABR are used across the world, including in developing countries such as Nigeria (although by no means ubiquitously and cohesively as part of a universal programme). Administering the tests is non-invasive, relatively quick, and does not need sedation or sleep, making it amenable to neonates and their parents and families (Olusanya, Luxon and Wirz, 2005). Expertise in hearing-related illness is unnecessary to administer them, and results can be recorded within a minute or two. However, as explained previously, OAE screening immediately following birth may often yield a high rate of false positives, which is mainly because of neonatal ear canals being blocked by vernix plugs (Meier *et al.*, 2004).

Consequently, OAE screening is usually delayed for 24 to 48 hours after birth. An expedient protocol for NNHS to avoid false positive results and unnecessary referrals is to apply OAE first (within 24-48 hours), then AABR (Van Dyk, Swanepoel and Hall, 2015). Infants flagged by the second-stage screening can consequently undergo AABR diagnostic evaluation, ideally within three months following birth, and if they fail the latter confirmatory test, they are diagnosed with permanent CEHL, and they may consequently be admitted to a programme for early intervention (Olusanya, Luxon and Wirz, 2005).

1.8 Neonatal Screening for HI

Screening neonates for hearing is generally standard care in developed countries, but it is not routine in developing nations, including Nigeria, which currently does not have any policy pertaining to this issue (Jatto *et al.*, 2018). A few limited studies (Olusanya *et al.*, 2004;

Olusanya and Solanke, 2009; Bright *et al.*, 2017; Khoza-Shangase, 2017; Jatto *et al.*, 2018; Swanepoel and Clark, 2019), have explored related phenomena, identifying barriers to early detection as socio-economic status (particularly income), perceptions among parents, and health beliefs. By understanding the current pathways to screening and care, attitudes and perceptions of parents and healthcare stakeholder, the researcher may be able to suggest locally nuanced, acceptable, and accessible route to more effective screening.

Studies have demonstrated that screening minimises costs and enables easy detection, particularly for structural causes of HI, which can only be facilitated with parental collaboration (Aite *et al.*, 2002; Arnold *et al.*, 2006). It is suggested that without a blanket screening policy or coherent guidelines for parents, the status quo militates against the possibility of large numbers of parents autonomously committing to a diligent screening regime. Consequently, developing countries such as Nigeria continue to suffer from delayed detection and presentation to health facilities, informal care delivery, and socioeconomic barriers to appropriate care delivery (Olusanya and Solanke, 2009).

1.9 Chapter summary

The initial chapter lays the groundwork for the research by discussing the global and local importance of NNHS. HL, especially in youngsters, constitutes a major public health concern, impacting millions worldwide, with a disproportionate prevalence in low-income nations like Nigeria. Notwithstanding the established advantages of early detection and treatments for HI, Nigeria does not possess a unified national policy regarding NNHS. This chapter emphasises the crucial developmental period in early childhood, wherein prompt intervention might alleviate enduring effects of HL. The chapter delineates obstacles including socio-economic limits, cultural convictions, and systemic healthcare deficiencies. It emphasises the necessity for tailored screening approaches and sustainable healthcare systems to enhance outcomes for children with HI in Nigeria.

This chapter has introduced the importance of considering childhood HI and the need to specifically consider this within the context of LMICs. This is set within the context of multiple forms of HL, with several causation pathways and stages of prevention. While screening is generally advocated, this comes with potential barriers. According to Underwood and Isikdag (2010), barriers inhibit implementation and use of a programme or a process (Ali *et al.*, 2018; Isikdag, 2018). In this study, barriers are personal, social and structural factors that hinder parents from accessing NS for HL. These are considered in more detail in the following literature review.

CHAPTER 2

Literature Review

2.1 Introduction and Literature Review Strategy

This chapter reviews literature relevant to the topic of exploring the care pathway, attitude and perceptions of parents and healthcare stakeholders to access to NS for HL in Port Harcourt, Nigeria. The aim of this critical narrative review is to identify some of the barriers to NS for HL. Due to a dearth of literature withing the Nigeria context specifically, it draws on related research from other contexts of LMICs. This review was a structured search of the literature with the aim of identifying the findings of previous literature with regard to parent-related barriers, attitudes and perceptions of access to NS for HL in Nigeria. This method involves the searching of electronic database and snowballing technique (Brereton *et al.*, 2008; Bettany-Saltikov, 2012; Aveyard, 2014). With support and guidance from the clinical librarian, Searching was undertaken in the CINAHL, Medline, PubMed, PubMed Central, Science Direct and Scopus databases (accessed via Brunel University London Library). There was also a manual search (by hand) technique, which involved searching, identifying, and assessing the bibliographies of selected papers (Greenhalgh and Peacock, 2005). The search strategy included the keywords displayed in Table 4.

Table 4: Keywords and concepts

Who	Newborn/ New-born	Child*	Neonate/ neonatal	
Problem	Hearing loss	Hearing impaired/ impairment	Hearing disorder	
Intervention	Screening			
What	Parent/ parental attitudes; Mother attitudes; Father attitudes	Parent/ parental perceptions	Stakeholders' views	Healthcare professional
Where	Nigeria	Low income countries	Developing countries	LMICs

Source: Author

These keywords were applied with Boolean Operators (e.g., “AND,” “OR,” and “NOT”) to search relevant data studies (e.g., *newborn screening* AND *hearing loss* AND Nigeria, *newborn screening for hearing loss* OR *hearing impairment* and *parent* attitude and perceptions* AND Nigeria NOT *adult hearing loss*, etc.). Truncation was also applied in this concept (e.g., child*) in order capture childhood and children.

The search was confined to studies published in the English language, The preliminary searching screened the abstracts of studies identified from keyword searching, relative to the applied inclusion and exclusion criteria, which were calibrated for relevancy and pertinence to answering the research question.

In order to include the most recent and relevant research, studies published prior to the year 2000 were not included (the relatively recent cut-off point of 2000 was selected to gather as many studies about Nigeria as possible, given the known paucity of research, as explained in Chapter 1). Articles had to be relevant to general NS for HL in Nigeria, or neonatal screening for hearing in other contexts (i.e., LMICs); correspondingly, articles not concerned with newborn or hearing screening were excluded. Studies also had to consider parental attitudes and perceptions, barriers to screening, stakeholders views containing data analysis regarding parental engagement and perceptions of neonatal screening. The “cited by” feature of Scopus database was also searched for relevant articles.

Studies identified as eligible and relevant for inclusion were searched in full-text versions, and their bibliographies were used to identify potentially relevant secondary literature for inclusion in this review.

Initially, 1,225 hits were identified from keyword searching of the databases, and a further 11 were noted from the bibliographies citations of studies subjected to full-text analysis, comprising an initial sample of 1,236 potentially eligible studies. Title and short description review led to the exclusion 1,193 of studies, due to being irrelevant, being published before the year 2000, not Nigerian or LMIC-related, or duplications. Figure 3 shows a PRISMA flow diagram illustrating the searching and screening process (leading to the inclusion of 29 studies), and Table 5 shows a summary of some of the studies collected.

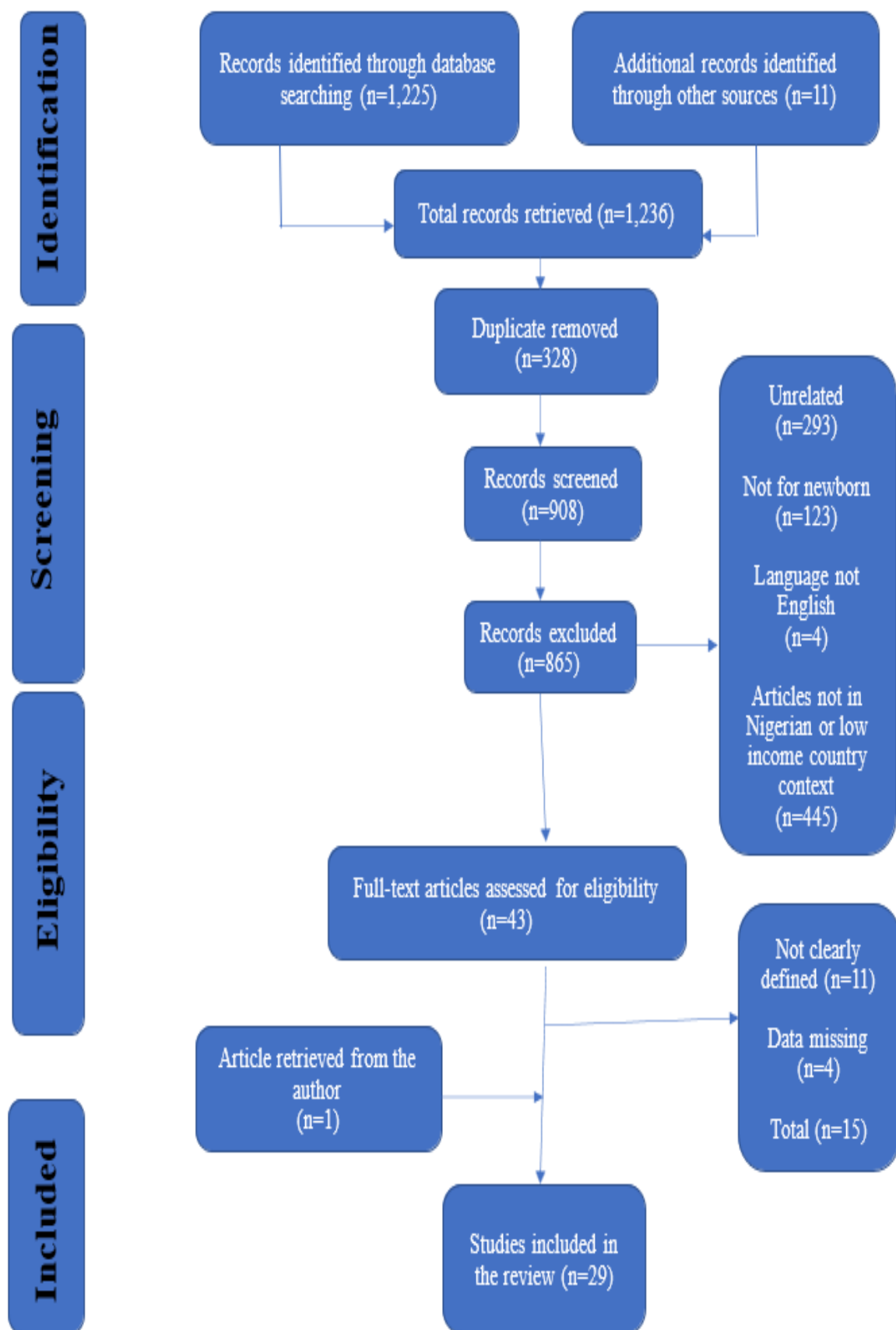


Figure 3: PRISMA flow diagram of study selection process

Source: Adapted from PRISMA (2021)

Table 5: Data extraction table for studies included in review

No.	Authors	Study Title	Study Setting	Study Design	Sample	Data Collection and Analysis	Key Findings
1	Frank-Briggs (2012)	Childhood hearing impairment: how do parents feel about it?	Hospital-based settings in Port Harcourt metropolis	Questionnaire-based cross-sectional survey	37–51 parents of children with HI (numbers vary slightly across summaries)	Structured questionnaires exploring parental perception and attitudes towards childhood HL and NS; descriptive analysis	Many parents expressed negative emotions and considerable anxiety about their child's HI. Knowledge about causes and the possibility of early detection was limited, and there was evidence of negative or ambivalent attitudes toward NS, indicating the need for sustained parental education and counselling.
2	Tobih <i>et al.</i> (2014)	Profile of childhood hearing loss in a Nigerian teaching hospital	Tertiary hospital, SW Nigeria	Retrospective review	53 children	Case note review	Majority of HL was acquired and preventable
3	Lasisi <i>et al.</i> (2014)	Neonatal hearing screening in a rural/sub-urban community in Nigeria, Sub-Sahara Africa – A preliminary report	UCH Ibadan and Bilal Maternity Centre, Agodi (rural/sub-urban community)	Prospective NNHS study	453 newborns	Two-stage AABR screening during birth admission and postnatal period; descriptive statistics and assessment of associations between maternal/neonatal factors and referral	First-stage referral rate was 49.4%; overall pass rate 56.3%. Maternal pre-eclampsia was significantly associated with referral, whereas socio-epidemiological and basic neonatal variables were not. Referral rates were higher than previously reported, and high loss to follow-up between screening stages was identified as a major implementation challenge.

Table 5: Data extraction table for studies included in review

No.	Authors	Study Title	Study Setting	Study Design	Sample	Data Collection and Analysis	Key Findings
4	Nduka, Aitafo and Nduka (2014)	Prevalence of hearing impairment amongst primary school children in Port Harcourt, Rivers State: Implication for strengthening of school health programme in Nigeria	Primary schools in Port Harcourt City	School-based cross-sectional prevalence study	802 pupils (405 boys, 397 girls) aged mainly 5–13 years	Multistage sampling; otoscopic examination followed by pure-tone audiometry; calculation of prevalence and comparison by age group and laterality	Overall prevalence of HI was 29.4%, higher among older children (11–13 years) than younger (5–7 years). Most had slight impairment (16–25 dB HL); unilateral loss (54.1%) was more common than bilateral. Authors recommended routine hearing screening at school entry within school health programmes.
5	Okhakhu <i>et al.</i> 2010	Universal neonatal hearing screening: Awareness and attitude of mothers attending the antenatal clinic in a tertiary health facility in Benin City, Nigeria.	Experimental study	Structured questionnaire	204 participants	Awareness and positive attitude in mothers attending antenatal clinic	Mothers are willing to spend for the treatment of HI in children

Table 5: Data extraction table for studies included in review

No.	Authors	Study Title	Study Setting	Study Design	Sample	Data Collection and Analysis	Key Findings
6	Labaeka <i>et al.</i> (2018)	Prevalence of hearing impairment among high-risk newborns in Ibadan, Nigeria	Neonatal unit, University College Hospital (UCH), Ibadan	Longitudinal cohort of high-risk newborns	201 high-risk newborns	AABR screening at admission and discharge (30, 45, 70 dB), with rescreening at 6 weeks post-discharge; calculation of risk ratios and confidence intervals for associations between clinical risk factors and persistent HL	At 6-week follow-up, 9.5% still failed screening; most persistent losses were bilateral (94.7%) and severe (52.6%). Acute bilirubin encephalopathy, intraventricular haemorrhage, meningitis, recurrent apnoea, severe perinatal asphyxia and prolonged amikacin use were strongly associated with persistent HL, supporting targeted follow-up of SCBU graduates with these risk factors.
7	Jatto <i>et al.</i> (2018)	Parental knowledge and perceptions of neonatal hearing screening in Nigeria	Hospital-based, South-South Nigeria	Cross-sectional	120 parents	Questionnaire survey	Poor awareness but positive attitudes to screening
8	Akinola <i>et al.</i> (2018)	Knowledge and attitudes of mothers about infant hearing loss and neonatal hearing screening in a Nigerian tertiary hospital	Antenatal clinic, tertiary hospital in Nigeria	Descriptive cross-sectional questionnaire survey	114 women aged 18–45 years attending antenatal clinic	Structured self-administered questionnaire on awareness of infant HL, risk factors, timing and acceptability of screening; descriptive statistics	Awareness of infant HL and NNHS was generally poor. Nonetheless, willingness to accept screening for their babies was high. Education level and socio-economic status were associated with greater acceptance, suggesting that information provision in antenatal care could enhance uptake.

Table 5: Data extraction table for studies included in review

No.	Authors	Study Title	Study Setting	Study Design	Sample	Data Collection and Analysis	Key Findings
9	Obukowho (2017)	Risk factors of hearing impairment among lower primary school children	Port Harcourt schools	Cross-sectional	420 children	Audiometry	Otitis media and infections were major risk factors
10	Olajuyin <i>et al.</i> (2021)	Aetiologies of profound bilateral sensorineural hearing loss in Ekiti State	ENT clinics, Ekiti	Retrospective	78 children	Case review	Birth asphyxia and infections were dominant causes
11	Somefun <i>et al.</i> (2014)	Caregiver knowledge of childhood hearing loss in Nigeria	Community-based	Cross-sectional	200 caregivers	Structured interviews	Low knowledge delayed health-seeking
12	Adebola <i>et al.</i> (2013)	Hearing loss among neonates with severe jaundice in Nigeria	Neonatal wards	Case-control	120 neonates	AABR testing	Hyperbilirubinemia strongly associated with HL
13	Ogunkeyede <i>et al.</i> (2014)	Pattern of hearing loss in Nigerian children	ENT clinics	Descriptive	98 children	Audiological testing	Late presentation common
14	Olusanya and Solanke (2009)	Maternal factors associated with neonatal hearing screening outcomes	Lagos maternity centres	Cross-sectional	2,000 infants	Screening records analysis	Non-hospital births increased screening failure

Table 5: Data extraction table for studies included in review

No.	Authors	Study Title	Study Setting	Study Design	Sample	Data Collection and Analysis	Key Findings
15	Adedeji <i>et al.</i> 2015	Management challenges of congenital & early onset childhood hearing loss in a Sub-Saharan African country	Retrospective descriptive study	Observational study	223 children	Burden of congenital deafness poses high rate of dissatisfaction in children	Challenges in relation to management of daily living activities associated with HI
16	Adeyemo <i>et al.</i> (2016)	Awareness of neonatal hearing screening among Nigerian mothers	Antenatal clinics	Cross-sectional	350 women	Questionnaire	Awareness was very low
17	Olatoke <i>et al.</i> (2016)	Hearing impairment among high-risk neonates in Ilorin	Neonatal unit	Prospective	180 neonates	AABR screening	NICU admission predicted HL
18	Olusesi <i>et al.</i> (2017)	Paediatric hearing loss and access to rehabilitation in Nigeria	ENT clinics	Mixed methods	92 children	Audiology + interviews	Cost limited access to hearing aids
19	Afolabi <i>et al.</i> (2018)	Risk factors for childhood hearing loss in northern Nigeria	Teaching hospital	Case-control	150 children	Clinical assessment	Perinatal factors predominated
20	Ezeanolue <i>et al.</i> (2018)	Early detection of hearing loss in Nigerian infants	Immunisation clinics	Pilot study	210 infants	OAE screening	Community screening was feasible

Table 5: Data extraction table for studies included in review

No.	Authors	Study Title	Study Setting	Study Design	Sample	Data Collection and Analysis	Key Findings
21	Lawal <i>et al.</i> (2017)	Knowledge of birth defects among nursing mothers in a developing country	Two major hospitals in Ibadan, Nigeria	Descriptive cross-sectional study	714 mothers (17–42 years) attending postnatal/child health clinics	Interviewer-administered questionnaires; descriptive and inferential statistics in SPSS, with significance at $p < 0.05$	Only 25.6% of mothers were aware of birth defects. Awareness was higher in older, better-educated, higher-socioeconomic women, and in those booking early and at tertiary facilities. Education, socioeconomic class, and timing/location of booking independently predicted awareness. The study highlighted poor maternal awareness in a setting without formal screening programmes.
22	Salami <i>et al.</i> (2019)	Delayed diagnosis of childhood hearing loss in Nigeria	ENT clinics	Retrospective	110 cases	Case review	Average diagnosis occurred after age 3
23	Adekoya <i>et al.</i> (2020)	Barriers to universal newborn hearing screening in Nigeria	Multi-centre	Qualitative	30 HCPs	Thematic analysis	Workforce and policy gaps identified
24	Okeowo <i>et al.</i> (2020)	Hearing screening outcomes among neonates in Lagos	Public hospitals	Cross-sectional	500 neonates	OAE/AABR	Screening coverage feasible but follow-up poor
25	Adekunle <i>et al.</i> (2021)	Prevalence of hearing loss among children attending special schools	Lagos State	Descriptive	140 children	Audiometry	Majority had preventable causes

Table 5: Data extraction table for studies included in review

No.	Authors	Study Title	Study Setting	Study Design	Sample	Data Collection and Analysis	Key Findings
26	Tobih <i>et al.</i> (2014)	Profile of childhood hearing loss in a Nigerian teaching hospital	Tertiary health institution, Nigeria (teaching hospital ENT/audiology services)	Retrospective hospital record review (Jan 2007–Dec 2011)	53 children with confirmed HL	Review of clinical records to extract aetiology, degree of loss and rehabilitation status; descriptive statistics	The majority (92.5%) of childhood HL cases were acquired rather than congenital, with birth asphyxia accounting for 88.7% of acquired causes. Over 73% presented with moderately severe to profound loss. Only 15% had hearing aids fitted and 22.6% would require cochlear implantation, but many families could not afford devices, underlining major rehabilitation gaps.
27	Mohammed <i>et al.</i> (2022)	Parental acceptance of neonatal hearing screening in northern Nigeria	Community-based	Cross-sectional	280 parents	Questionnaire	High acceptance once informed
28	Adeyinka <i>et al.</i> (2023)	Hearing loss in Nigerian newborns following NICU admission	Teaching hospitals	Cohort study	190 newborns	AABR follow-up	Persistent HL common
29	Okorie <i>et al.</i> (2024)	Feasibility of integrating hearing screening into primary care in Nigeria	Primary health centres	Implementation study	12 PHCs	Programme evaluation	Integration into PHC was achievable

Source: Author

2.2 Models of Individual Health Behaviour

2.2.1 Understanding Access to Screening for NHL

There is extensive international literature researching the area of hearing loss using the health behaviour theory to explore the roles of attitudes and perceptions in health behaviour concerning NS for hearing loss (Manchaiah, 2012; Saunders *et al.*, 2013; Singh, 2015; Fowler *et al.*, 2017; Carlson *et al.*, 2019). A theoretical analysis of health behaviour can identify what the problem is, the reasons why, and identify how the negative behaviour can be addressed and changed, and what should be used as an indicator for evaluation of success (Glanz, Rimer and Viswanath, 1992; Lawal *et al.*, 2017).

The health behaviour theory has been used in the study of access to health services. Access to healthcare services (in this study's context, access to NS for hearing loss) is closely linked to what healthcare services are required, what is needed, what has been provided and what has been used (Aday and Andersen, 1974). It must be emphasised that different needs exist in the case of rural and urbanised populations, as they face particular inequalities in healthcare as a result of availability of general healthcare facilities, cost of services (including transportation for those in rural areas), and a lack of HCPs (Ityavyar, 1988). Nevertheless, theories of health behaviour have often been applied to determine participation decisions in programmes for health promotion including screening programmes (McArthur *et al.*, 2018; Gabriel *et al.*, 2019). Health behaviours are affected by cognitive aspects (e.g., expectations, beliefs, motivation, perceptions and values), characteristics of personality (e.g., emotional traits, and affective states), and behavioural conditioning and habits (Gochman, 1982).

2.2.2 The Socio-Ecological Model (SEM)

The SEM was introduced by Urie Bronfenbrenner in the 1970s as a conceptual framework to understand human development, and later it was improved and modified as a theory in the 1980s (Raingruber, 2013; Kilanowski, 2017). The initial demonstration of the theory was in the form of nesting circles, which then places an individual in the middle, surrounded by a range of systems (Bronfenbrenner, 1992; Kilanowski, 2017). Also known as the ecological system theory (Kilanowski, 2017), the SEM provides explanations for the relationships between human behaviours and their environments (Raingruber, 2014). The model postulates that an individual's health is influenced by a number of interactions between the person (individual), political and social environments as well as the local community (Sallis *et al.*, 2008; Reisner *et al.*, 2013). For over two decades the SEM has been improved and modified by prominent researchers into different models (Glanz, Rimer and Viswanath, 2008). However, regardless of diverse modifications, the Bronfenbrenner ecological systems theory remains the most

commonly used framework by researchers to explain various health issues (Brown, 2011; Hickey *et al.*, 2012).

This ecological framework is widely adapted in the field of public health for health promotion endeavours, as well as its application can be referenced to varieties of health issues (Kilanowski, 2017). For example, the Centers for Disease Control and Prevention have adapted the SEM for various health promotion activities, by recognising the: interpersonal, community, organisational, policy and community spheres of the framework (Kilanowski, 2017).

However, despite the fact that the SEM has been used by previous health-seeking behaviour studies, limitation of this model as it relates to my study is the fact that it does not practically discuss details of an individual's life experiences, which the HBM can do, the Bronfenbrenner model appears to be valuable only as a rudimentary theoretical position (Stivaros, 2007; Raingruber, 2014). Regarding this drawback, it is important to bear in mind the aim of this present study which is to explore individual's experiences in relation to their perceptions and attitudes that contributes to delays in health-seeking for malaria treatment.

Furthermore, the second limitation of the SEM is that it does not account for individual's abilities, and also it neglects the rights and feelings of individuals," as well as psychological complexity (Davis, 2011; Stanger, 2011). Thirdly, the developmental stages of biological and cognitive factors are overlooked in this framework (McLaren and Hawe, 2005; Raingruber, 2013).

2.2.3 Selecting the Health Belief Model (HBM)

This study seeks to understand and interpret parents' attitudes and perceptions toward NS for HL, including why some parents accept screening readily while others delay, decline, or disengage from follow-up. The HBM is an appropriate theoretical framework for this purpose because it provides a structured way to examine how individuals' beliefs, expectations, and evaluations of risk shape their health-related decisions. Importantly, the HBM integrates social and cognitive perspectives, allowing the researcher to explore not only what parents know, but how they interpret what they know within their lived realities, cultural contexts, and experiences of healthcare systems (Rosenstock, 1974; Glanz, Rimer and Viswanath, 1992; Jones *et al.*, 2014; Li *et al.*, 2015; Daryani *et al.*, 2016).

Historically, the HBM emerged from social psychology in the 1950s and was developed to explain why individuals did or did not take up preventive health services, particularly where action was required before symptoms were obvious. It was later extended to understand

adherence to treatment and responses to symptoms, making it especially relevant to conditions such as HL where early identification is beneficial, but the impairment may be “invisible” at birth (Glanz, Rimer and Viswanath, 1992; Daryani *et al.*, 2016; Lu *et al.*, 2019; Lawal *et al.*, 2017). NHL is typically not apparent to parents in the neonatal period, and the perceived urgency of screening is therefore likely to depend on how parents conceptualise the risk and consequences of HL and the value they attribute to early detection. The HBM provides a coherent framework for analysing these interpretive processes.

At the core of the HBM is the proposition that health behaviour is shaped by *beliefs* about a health condition, and by related assessments of the feasibility and value of the recommended action. The model traditionally comprises four key constructs: perceived susceptibility (e.g., belief about the likelihood that the newborn could have HL), perceived severity (e.g., belief about the seriousness of HL and its consequences), perceived benefits (e.g., belief that screening will be helpful in preventing harm or enabling early support), and perceived barriers (e.g., belief about the costs or obstacles that make screening difficult) (Noar and Zimmerman, 2005). Table 6 explains the key concepts of the HBM.

Table 6: HBM constructs

Concept	Definition	Application
Perceived Susceptibility	One's opinion of chances of getting a condition	Define population(s) at risk, risk levels; personalise risk based on a person's features or behaviour; heighten perceived susceptibility if too low.
Perceived Severity	One's opinion of how serious a condition and its consequences are	Specify consequences of the risk and the condition
Perceived Benefits	One's belief in the efficacy of the advised action to reduce risk or seriousness of impact	Define action to take; how, where, when; clarify the positive effects to be expected.
Perceived Barriers	One's opinion of the tangible and psychological costs of the advised action	Identify and reduce barriers through reassurance, incentives, assistance.
Cues to Action	Strategies to activate "readiness"	Provide how-to information, promote awareness, reminders.
Self-Efficacy	Confidence in one's ability to take action	Provide training, guidance in performing action.

Source: Noar and Zimmerman (2005)

In the context of NNHS, perceived susceptibility may be influenced by whether parents believe HL “can happen in their family,” whether they are aware of risk factors, or whether they see HL as rare. Perceived severity may relate to parents’ understanding of the developmental implications of HL, including effects on language acquisition, schooling, and social participation. Perceived benefits may include beliefs that screening offers reassurance, enables early intervention, or prevents future difficulties. Perceived barriers may include financial constraints, distance to services, time off work, fear or anxiety about the result, mistrust of health services, or competing priorities after childbirth.

Contemporary applications of the HBM often include additional constructs that are particularly useful for screening contexts, notably self-efficacy and cues to action. Self-efficacy refers to a parent's confidence in their ability to access and complete screening and follow-up processes (for instance, navigating referral systems, attending appointments, and communicating with providers).

Cues to action are triggers that prompt behaviour, such as advice from a midwife or nurse, reminders from a clinic, personal experiences of disability within the family, or community narratives about HL (Mirotznik *et al.*, 2000). These additions are particularly relevant in NS because uptake and follow-up are often influenced not only by beliefs, but also by prompts embedded within service delivery pathways. In practical terms, even where parents believe screening is beneficial, they may not act unless there are timely cues (e.g., HCP recommendation, appointment scheduling at delivery facilities, or community outreach), and even where cues exist, parents may not follow through if perceived barriers are overwhelming or self-efficacy is low.

Although other behavioural theories are available, the choice of the HBM is justified because it is especially well suited to preventive health behaviours that depend on perceptions of risk, benefit, and feasibility. For example, the Theory of Reasoned Action (TRA) and its extension, the Theory of Planned Behaviour (TPB), argue that behaviour is driven by intention, which is shaped by attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991; Noar and Zimmerman, 2005; Ramayah, Lee and Mohamad, 2010; Norman and Heffernan, 2017). These models are valuable for understanding how social approval, cultural expectations, and perceived control contribute to decision-making.

However, they place heavier analytical emphasis on measuring and quantifying social norms, which can be difficult to operationalise in complex sociocultural environments where norms are plural, contested, and context-specific. Moreover, while TPB includes perceived behavioural control, both TRA and TPB may under-emphasise structural constraints such as service availability, affordability, and health system accessibility, which are central considerations in many low-resource settings.

In contrast, the HBM directly foregrounds perceived barriers and offers a clearer pathway for analysing how parents weigh practical constraints against perceived benefits and severity. For these reasons, the HBM provides a more immediately applicable framework for examining parental perceptions of NNHS and identifying modifiable levers for improving uptake and follow-up.

2.2.4 NS for HL in Nigeria

The relevance of the HBM becomes particularly clear when situated within the Nigerian context, where the burden of HL is high and early detection pathways remain uneven. Nigeria has been reported as having one of the highest prevalences of childhood HL globally, although the precise reasons remain incompletely understood and are likely multifactorial, involving infectious disease burden, perinatal complications, ototoxic exposures, and health system gaps (Olusanya *et al.*, 2009; Lasisi *et al.*, 2014). Robust epidemiological estimates are challenging due to variations in study design, definitions, screening protocols, and representativeness. Nonetheless, important community-based evidence exists.

A pioneering study using a two-stage screening protocol involving OAE followed by AABR in Nigerian communities reported a prevalence of permanent HI of 28 per 1,000 newborns, defined as a hearing threshold of ≥ 30 dB hearing level (Olusanya, Wirz and Luxon, 2008). This estimate is notably higher than reported in some other African settings. For example, a comparable study in South Africa reported a much lower prevalence of approximately 1.5 per 1,000 (Friderichs *et al.*, 2012). While differences between these estimates may reflect genuine epidemiological variation, they may also reflect methodological differences, including population risk profiles and access to maternal and neonatal care.

In Nigeria, the implementation of NNHS presents substantial logistical and structural challenges, which intersect strongly with the perceptual and behavioural factors the HBM seeks to explain. These challenges include limited availability of screening equipment and trained personnel, inconsistent integration of screening into routine maternal and newborn care, and weak referral pathways for diagnostic evaluation and early intervention. These difficulties are often amplified in rural and underserved communities where access to health facilities is constrained by distance, transport costs, and opportunity costs such as time away from work or childcare responsibilities (Holte *et al.*, 2012; Ptok, 2011; Olusanya, 2015; Akinola *et al.*, 2018). In such contexts, even when parents value screening in principle, the perceived barriers may outweigh perceived benefits, particularly when HL is not immediately visible and when families have pressing competing demands during the postpartum period.

Accordingly, screening programmes in Nigeria must be designed in ways that deliberately reach underserved groups and address both the health system barriers and the belief-based barriers that influence parental engagement. This is precisely where the integration of the HBM into the study design becomes valuable. By examining perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy among parents, and also considering the

perspectives of healthcare stakeholders who shape service pathways, the research can identify context-specific points of intervention.

These may include improving HCP communication and counselling (strengthening cues to action), integrating screening into existing maternal-child health contact points (reducing barriers), providing clearer information about consequences of delayed identification (addressing perceived severity), and strengthening referral and follow-up systems to improve confidence and capability to complete the screening pathway (enhancing self-efficacy). Through such approaches, locally nuanced recommendations can be harnessed to health planning to improve the acceptability, accessibility, and sustainability of NNHS in Nigeria.

It should be noted that many parents are anxious about potential emotional harms caused to them and their infants by screening itself (Olusanya, Luxon and Wirz, 2005). Ideally, screening can prevent or reduce HI-related impediments to optimum health and quality of life for patients, but it is not perfect (Haghshenas *et al.*, 2014). Any screening programme has the potential for some quantity of inaccurate results, wrongly declaring infants to have or not have CEHL in this case. Conversely, there is a suggestion that if HCPs can generate a critical mass of service users satisfied with screening through careful consideration of parental attitude and perceptions, this could cause the wholesale normalisation of screening in Nigeria. In the meantime, particularly vulnerable groups (i.e., in NICU and special care baby units) should be earmarked for NNHS interventions (Olusanya *et al.*, 2007).

The envisioned programme for hearing screening should meet certain requirements, including that the issue (i.e., infant HI) be a notable health problem; the test for screening should be safe, valid, and simple to administer; the intervention should be available, effective, and accessible; and screening benefits should outweigh potential harms (Wroblewska-Seniuk *et al.*, 2016).

It can be anticipated that there are no substantive parent-related barriers to OAE and AABR screening in some part of Nigeria. Longstanding research conducted relatively recently among new and expectant mothers in Lagos to explore their readiness and predisposition toward neonatal screening for hearing indicated highly favourable and receptive views (Olusanya, Luxon and Wirz, 2005). This is enhanced by the non-invasive and fast nature of the tests and the obvious perceived severity of HI and the benefits of early detection. Furthermore, the tests are drug-free and involves no injections, easing their acceptability to parents (Olusanya, Luxon and Wirz, 2005).

Screening neonates for hearing is routine in most developed nations, but in developing countries such as Nigeria this is not the case. (Jatto *et al.*, 2018; Rai and Thakur, 2013). A systematic or routine childhood HI screening remains rare, including in hospital settings in addition to community and school programmes (Olusanya, Wirz and Luxon, 2008).

2.3 Parental Attitudes and Perceptions

Parental attitudes and perceptions are vital and has a positive or negative effect on the uptake of NS for HL. In view of lack of awareness, diversified cultural and religious beliefs, parent-related barriers to screening for NHL exist irrespective of the availability of screening (as in the case of Port Harcourt), cost effectiveness of the screening or the screening technologies used. For example, Frank-Briggs (2012), identified the psychological association of parents of neonates having HI with the spiritual causes of such impairment rather than medical causes.

According to Frank-Briggs (2012), some Nigerian parents believe that any disorder or impairment in their child or children is a result of metaphysical and spiritual causes (i.e., bewitchment and ancestral worship) or God's punishment for their evil deeds, resulting to sadness associated with HL of their neonates. This serves as a barrier for accessing NS for HL as they believe there is no remedy to it (Frank-Briggs, 2012; Akinola *et al.*, 2018; Jatto *et al.*, 2018).

Nevertheless, a significant population of parents are willing to pay for the cost of screening programmes, but they refuse participation because of prevailing stigmatisation and social isolation which blames the parents of neonates for such impairments (Frank-Briggs, 2012). The situation is exacerbated in Nigeria as the affected children suffer from isolation, negligence and indescribable hardship which results in destitution, resorting to street begging by the affected children and mature victims (Lasisi *et al.*, 2014).

2.4 Barriers to NS for HL

The complications of HL in Nigeria are exponentially exacerbated due to late diagnosis, with parents bringing their children to HCPs too late, and delays in diagnostic procedures. This is due to a confluence of factors, including poor health resource utilisation and cultural issues (Frank-Briggs, 2012). Parents are essential partners in detection programmes for early HL, collaborating with HCPs to promote the earliest possible identification of HL and to initiate speedy interventions to prevent potentially lifelong impacts. However, parents require education concerning appropriate attitudes related to infant HL (Narayanan and Merlyn, 2015).

A study conducted by Olusanya (2009) indicated that, in LMICs (including Nigeria), parents decline participating in the screening programmes due to unfavourable cultural beliefs. As a result, irrespective of their participation in the initial screening, they do not continue the follow-up screening process. All these variations in attitude and perceptions, if not properly considered, will hinder or reduce the participatory level of parents to neonatal screening for HL (Olusanya, 2009). In Nigeria, parental engagement with HCPs and the health system in general is conditioned by their perceptions of the value and quality of the services they receive. Parental attitude and perceptions of NNHS, and early years' health follow-up, directly affect their engagement (and by extension their children's engagement) with health services (Norman and Heffernan, 2017; Labaeka *et al.*, 2018).

The current study builds upon a pilot study on community-based and hospital-based universal NS for HL conducted in Lagos (Yoruba ethnic group) in Nigeria, by Olusanya (2006), to ascertain the most effective and appropriate model to be adopted for early detection of permanent and CEHL in Lagos and to determine if these models and screening procedure are culturally appropriate considering the attitudes of parents to Yoruba traditions. The early detection is a significant step in creating rehabilitative measures for children with HL, their families and community at large.

According to Olusanya (2006), the results of the study showed that, targeted NS for HL is feasible, some parents expressed readiness for their children to be screened. However, some parents, especially from community-based hospitals, demonstrated a reluctant attitude, as they were not sure the culture permits the process. Olusanya (2006) failed to ascertain the key stakeholders' view in Lagos on NS, as this is pivotal to an effective and efficient implementation of programmes and policies to enhance NS for HL (e.g., due to the need to consider cultural differences). The current study however focuses on Port Harcourt (where the prevailing ethnic group are the Igbo people), to explore the care pathway, and parental and healthcare stakeholders' attitudes and perceptions of access to NS for HL in Port Harcourt, Nigeria.

2.5 Views of Healthcare Stakeholders

In this study, the term "stakeholder" is used in line with stakeholder theory, which conceptualises stakeholders as individuals or groups who have a legitimate interest in, influence over, or are affected by the design, delivery, and outcomes of a programme or policy (Freeman, 1984; Elms, Berman and Wicks, 2002). Applied to NS for HL, stakeholders can therefore be defined as actors whose decisions, actions, and practices shape whether screening is offered, accepted, implemented, followed up, and sustained. Consistent with

recent work in newborn and population screening, stakeholders may include parents or carers of newborns, HCPs and scientists involved in maternal, neonatal, and hearing care, and health policymakers or service managers responsible for planning, regulation, and funding (van Dijk *et al.*, 2021; Kariyawasam *et al.*, 2024). While parents are often central stakeholders, because they provide consent and engage with screening and follow-up, this study deliberately includes HCPs as an additional primary stakeholder group, in order to address a critical and underexplored dimension of NNHS in the Nigerian context.

HCPs are defined here as clinicians and allied health workers who are directly involved in antenatal, perinatal, neonatal, and early childhood care, and who play a practical role in recommending, delivering, coordinating, or referring newborns for hearing screening. This includes, but is not limited to, obstetricians, paediatricians, neonatologists, midwives, nurses, community HCPs, ENT surgeons, audiologists, and public health practitioners. These professionals occupy a pivotal position at the interface between policy and practice. They act as gatekeepers to screening services, trusted sources of information for parents, and key agents in translating policy intentions into routine care (Hlongwana and Tsoka-Gwegweni, 2017). Their knowledge, attitudes, confidence, and perceived constraints directly influence whether screening is prioritised, how it is communicated to parents, and whether referral and follow-up pathways are activated and sustained.

The decision to focus on HCPs as stakeholders is theoretically and empirically justified. From a theoretical perspective, models of health-system change, and implementation science emphasise that professional attitudes and behaviours are central determinants of whether evidence-based interventions are adopted and normalised in routine practice (Elms, Berman and Wicks, 2002; Harrison, Freeman and Cavalcanti, 2015). Even when parents are willing to accept screening, programmes are unlikely to succeed if HCPs lack awareness, training, time, institutional support, or belief in the value of the intervention.

In the specific case of NNHS, early identification often depends on HCPs recognising its importance despite the absence of visible symptoms, integrating screening into already busy clinical workflows, and ensuring appropriate counselling and follow-up. As such, understanding HCPs' perceptions, perceived barriers, and facilitators is essential for identifying why screening may not be routinely implemented, even where the technical feasibility of screening has been demonstrated.

Conducting a study on HCPs' perspectives remains important despite the existence of related studies in other Nigerian states. Many studies in this field concerning Nigerian NNHS concentrated on epidemiology, feasibility, and parental awareness, particularly in Lagos,

Ibadan, and a small number of tertiary centres (Olusanya, Wirz and Luxon, 2008; Lasisi *et al.*, 2014; Labaeka *et al.*, 2018). While these studies have provided valuable evidence that screening is technically possible, and that HL prevalence is high, they do not fully explain why NNHS has not been scaled up or embedded into routine care nationwide.

Moreover, findings from one state cannot be assumed to be transferable to another, as HCPs' experiences are shaped by local service organisation, staffing levels, training opportunities, leadership support, and resource availability. Nigeria's health system is highly decentralised, and substantial inter-state variation exists in infrastructure, governance, and health workforce capacity. Consequently, HCPs' perceptions of feasibility, responsibility, and priority are likely to differ across settings, even when national guidelines or evidence are similar. Focusing specifically on Port Harcourt is therefore both empirically and strategically justified.

Port Harcourt is the capital of Rivers State, and a major metropolitan centre in the Niger Delta, characterised by rapid urbanisation, a large and growing population, and a complex mix of public and private healthcare provision. The city has been shown to carry a substantial burden of childhood hearing problems; for example, school-based studies in Port Harcourt have reported high prevalence of HI among primary school children, suggesting that many cases are not detected or addressed early in life (Nduka, Aitafo and Nduka, 2014). In addition, earlier work from Port Harcourt has documented parental distress, stigma, and limited understanding surrounding childhood HI, highlighting the downstream consequences of delayed identification (Frank-Briggs, 2012). These findings underscore the likelihood that missed opportunities for early detection during the newborn period may be contributing to later educational and social disadvantages (and thus a general malaise in local socioeconomic development).

From a health-system perspective, Port Harcourt also presents distinctive contextual factors that may shape HCPs' views on NS. The city hosts tertiary referral facilities alongside overstretched secondary and primary care services, and HCPs operate within an environment marked by workforce shortages, competing clinical priorities, and broader public health challenges, including high neonatal morbidity and mortality and environmental health risks associated with industrial activity. These pressures may influence how HCPs prioritise preventive interventions such as NNHS relative to more immediately life-threatening conditions. Importantly, despite these contextual challenges, and the documented burden of childhood hearing problems, there is currently little or no published evidence specifically examining HCPs' perspectives on NNHS in Port Harcourt.

By focusing on HCPs in Port Harcourt, this study therefore addresses a clear evidence gap. It complements existing epidemiological and parental studies by examining the perspectives of

those who are essential to programme implementation, but whose views are rarely foregrounded in Nigerian research. In doing so, the study aligns with international calls, including those from the WHA and recent NS scholarship, which emphasise that sustainable screening programmes must be informed by context-specific evidence and the experiences of frontline HCPs (van Dijk *et al.*, 2021; Kariyawasam *et al.*, 2024). Ultimately, understanding HCPs' perspectives in Port Harcourt is crucial for identifying realistic, locally appropriate strategies to improve the implementation, acceptability, and sustainability of NS for HL in this setting.

2.6 Cultural and Structural Barriers to NS for HL in Nigeria

The evidence-base highlights that there are several barriers (and enablers) influencing the access to new-born screening for HL in Nigeria. Barriers are the institutional, social and personal factors that hinder parents from accessing NS for HL (Lent, Brown and Hackett, 2000). These include poor structure of screening programme and facilities, lack of accessibility, limited knowledge, parental attitudes and perceptions, lack of parental awareness of HL screening programme and common areas of misconceptions among parents and caregivers (Olusanya, Luxon and Wirz, 2005; Obukowho, 2017; Lasisi *et al.*, 2014).

Consequently, despite the availability of free screening facilities (screening programmes provided by some NGOss) in some areas (e.g., Port Harcourt), routine NS for HL is not practiced (Frank-Briggs, 2012; Nahar *et al.*, 2012; Pynnonen *et al.*, 2016). Thus, parental suspicions are generally the main mode of detection, usually around the age of 22 months, when symptoms become apparent (Olusanya, 2015). As a result, this leads towards late detection and low-level improvements in children suffering from this disorder and subsequent parental anxieties (Lang *et al.*, 2009; Suleimanifar, Jafadi and Zarandi, 2015). Therefore, parental attitude and perceptions have a significant and enormous impact on NS participation and subsequent follow up (Ravi *et al.*, 2016).

The Federal Ministry of Health in Nigeria acknowledges the WHA resolution on Early Hearing Detection and Intervention (EHDI) programmes, and some non-governmental organisations (NGOs) in Nigeria (e.g., Family Health International, Helping Hands, Health for the Sick Initiative, and the Sam Jaja Foundation) have instituted initiatives for interventions and early hearing detection (Brush *et al.*, 2005; Olusanya, Wirz and Luxon, 2008). However, despite this, it is not routinely practiced.

Previous research has explored the influence of certain factors on screening which includes a systematic literature review in parental perceptions of NS for HL in Nigeria, conducted by the

researcher of the current study in partial fulfilment for the award of M.Sc (Nwankwo *et al.*, 2023). The researcher identified that, studies were conducted on different forms of barrier to NS for HL (e.g., cost, availability of screening, community based and hospital-based screening, low income), but the care pathway, parental attitudes and perceptions including healthcare stakeholders' views to NS for HL was not researched in Port Harcourt metropolis. The focus on parent (including fathers) attitudes and perceptions was found to be *largely* absent.

This is somewhat problematic when there are indications that some parents have an important role to play in implementation of this new initiative and in healthcare choices of their children (Jatto *et al.*, 2018). For example, there are suggestions that parents do not actively engage with scheduled appointments for NS, and superstitious beliefs may also dominate their choices of healthcare services (Frank-Briggs, 2012). In addition, studies conducted by others (Tobih *et al.*, 2014; Lawal, Yusuf and Fatiregun, 2015; Ogwumike, Kaka and Adeniyi, 2012) on NS for HL acknowledged that, parental involvement and consent is essential for the attainment of universal or targeted NS for HL programme.

Comparatively, Graham *et al.* (2019) carried out a similar study in South Africa, using a qualitative approach to ascertain the knowledge and attitude of mothers to the risk factors associated with NS, and concurred that, adequate awareness and maternal views is necessary for the management and reduction of the risk factors of NHL. (Graham *et al.*, 2019). A further issue is that existing research has been conducted in specific areas of Nigeria or other African countries, with little consideration of the Port Harcourt region. This is important in order to get relevant data to illustrate the extent or success of EHDI, and as a basis for subsequent research specifically in Port Harcourt, Nigeria which has not been done. (Chikadibia Domike and Ogar, 2014).

The studies conducted in Nigeria (Olusanya, Wirz and Luxon, 2008; Olusanya and Akinyemi, 2009; Olusanya, Ebuehi and Somefun, 2009; Akinola *et al.*, 2018), were among the Hausa and Yoruba, who are two of the three major ethnic groups in major Nigerian states (i.e., Abuja, Benin, Ibadan, Kano, Lagos, and Ogun), covering various sociocultural and religious contexts. However, none of them studied the Igbo ethnicity (the third of the three major groupings in Nigeria), particularly in Port Harcourt, Rivers State. Given the ethnic and cultural differences between these groups, it is natural to expect variations in sociocultural health related attitudes and perceptions (Sina, Iyabo and Ayodele, 2014).

All societies have ancestral, indigenous traditions incorporating elements of herbal medicine, folklore, spirituality, and other dimensions of holistic healthcare provision (Jegede, 2011). The

metaphysical beliefs of communities determine their approach to healthcare, and cultural relativity, condition the ways in which illnesses (and consequently healthcare solutions) are conceptualised and treated (Moughalu and Jegede, 2010). As cultural constructions of illness also affect remedies, it is to be expected that the screening (in this case NS for HL) and the treatment of disease are influenced by the prevailing cultural milieu (Jegede, 2011).

For example, in a study of culture and health among the Igbo ethnic group, shows that some cultural beliefs could comprise barriers to effective healthcare provision, including the belief that illness is caused by witchcraft, which deters “victims” from seeking biomedical treatment, which is viewed as ineffectual in the face of supernaturally induced illnesses (Sina, Iyabo and Ayodele, 2014). While studies indicate that similar supernatural causes are influential in other ethnic groups (e.g., Yoruba) (Jegede, 2014; Adedini *et al.*, 2014) there is a need to explore and understand the specific cultural influences of the Igbo culture. Also, among the Nigerian Yoruba tribe (who mainly inhabit the south and west of Nigeria), disease is traditionally attributed to both natural and mystical/ supernatural causes, which consequently influences preferred solutions and choices with regard to healthcare choices (Jegede, 2011; Arisi and Oromareghake, 2011). One study of “ethnicity and health” noted the system of excluding wives in some ethnic groups, including the Huasa, which can be a major challenge women face, since this restricts them from accessing health care services including screening programmes (Adedini *et al.*, 2014).

Consequently, considering these variations in access to healthcare services in Nigeria, there is a need to investigate the current attitude and perceptions of parents and healthcare stakeholders to NS for HL in Port Harcourt, Nigeria as part of global efforts to address developmental disabilities (Chikadibia Domike and Ogar, 2014). This study therefore explores and triangulates findings relating to the care pathway, attitude and perceptions of parents with consideration of the views of healthcare stakeholders to access to NS for HL in Port Harcourt, Nigeria, which has not been done in this ethnic group in the existing studies in Nigeria.

2.7 Research Question, Aim, and Objectives

The question asked by this research is:

- ❖ How do parental attitudes, cultural beliefs, and institutional factors influence access to NNHS in Port Harcourt, Nigeria, and what are the perceptions of healthcare stakeholders regarding the implementation and sustainability of such screening programmes?

In order to answer the question, this study aims:

- ❖ To explore and understand the attitudes and perceptions of parents and healthcare stakeholders regarding access to NS for HL in Port Harcourt, Nigeria, in order to identify barriers, facilitators, and culturally appropriate strategies to enhance participation and implementation.

The above research question and aim will be addressed by meeting the following objectives:

- To explore parents' attitudes, and perceptions concerning NHL and screening, and how these influence their decisions to access available screening services.
- To investigate the views and experiences of healthcare stakeholders regarding the delivery, accessibility, and challenges of implementing NNHS programmes in Port Harcourt.
- To identify the cultural, socio-economic, and institutional barriers that hinder access to NNHS, and to suggest strategies for improving early detection and intervention within the Port Harcourt, Nigerian healthcare context.

2.8 Chapter Summary

This chapter critically reviews existing literature on NNHS, with a focus on parental attitudes, healthcare stakeholders' perceptions, and systemic challenges affecting screening accessibility in Port Harcourt, Nigeria. The chapter begins by outlining a rigorous literature search strategy, using databases such as CINAHL, Medline, PubMed, Science Direct, and Scopus, alongside manual reference checks. Keywords and Boolean operators were employed to identify relevant studies on NS, HL, and health attitudes, particularly in LMICs.

The review highlights that **HL** constitutes a major public health concern, with long-term developmental, educational, and psychosocial implications when undetected early. While UNHS has proven effective and cost-efficient in developed nations, Nigeria currently lacks a national policy or structured implementation framework. Consequently, screening practices are limited, often confined to tertiary institutions or pilot projects.

Key themes identified include low parental awareness and poor perception of hearing screening, often shaped by cultural and religious beliefs, stigma, and limited health education. Many communities associate HI with spiritual or moral causes, contributing to delays in seeking medical intervention. Structural barriers such as inadequate infrastructure, shortage of trained professionals, lack of equipment, and weak policy support further constrain screening uptake. From the HCPs' perspective, systemic challenges, insufficient funding, and fragmented service delivery impede effective screening programmes.

The chapter also compares findings from other developing contexts, suggesting that with adequate policy backing, community engagement, and workforce capacity building, effective hearing screening can be achieved. The literature identifies a significant research gap concerning how parental and healthcare stakeholders' attitudes influence access to NNHS in Port Harcourt. It concludes that understanding these perceptions is crucial for developing culturally sensitive, sustainable, and inclusive strategies for early detection and intervention in Nigeria's healthcare system.

CHAPTER 3

Methodology

3.1 Introduction

In order to explore the attitudes and perceptions of parents and healthcare stakeholders to access to NS for HL in Port Harcourt, this chapter examines the methodology, beginning with its philosophical viewpoint. As explained below, it justifies the selection of the interpretive paradigm for this investigation, and discusses qualitative research design, the numerous qualitative methodologies available, and the justification for employing a qualitative approach in this study. The chapter then presents the studied context, followed by a discussion of the study's participants, eligibility requirements, and sampling methodology. Explanations of the participant recruitment process, data gathering techniques, and data analysis are provided. The chapter concludes by discussing the study's methodological rigour and ethical considerations.

3.2 Research Philosophy

3.2.1 Design

Numerous researchers, social theorists, and philosophers have extensively debated diverse philosophical approaches in research over the years. Creswell (2014) defines philosophical viewpoints as the worldview of researchers, which is frequently influenced by their discipline or prior research experiences. This research follows the example of experts in methodology, who use several interchangeable terms to refer to the nebulous and overlapping concepts known as "philosophical perspectives," such as "paradigms" and "viewpoints" (Mertens, 2010; Denzin and Lincoln, 2017), as well as "philosophical" and "theoretical" "orientations" (Patton, 2014).

Regardless of the particular terminology used, philosophical viewpoints are crucial to research, because they underlie the ontological, epistemological, and methodological assumptions of researchers, and thus the way in which they comprehend and make sense of knowledge about the researched phenomena (Crotty, 1998; Denzin and Lincoln, 2017; Grix, 2010; Scotland, 2012). The application of a philosophical stance in research affects the process to produce knowledge (Fossey *et al.*, 2002). This suggests that philosophical underpinnings determine how researchers see a phenomenon and the methodology they employ (Denzin and Lincoln, 2017). Some authors contend that it is difficult for a researcher to undertake a study without doctrinaire adherence to clearly defined epistemological and

ontological positions (Scotland, 2012), but according to Creswell (2013), philosophical viewpoints are malleable, and are not fixed credal structures.

Among the various issues considered in research design selection, the ontological and epistemological position of the researcher in seeking to answer the research question is the most basic concern. This study investigates human participants' perspectives and attitudes on access to NS for HL in Port Harcourt, thus it adopts an interpretive philosophical view, with an inductive approach (see Figure 4). This selection also relates to the state of existing literature presenting evidence in relation to the research subject, and the practical techniques possible to collect data. This section provides a clear justification for this approach.

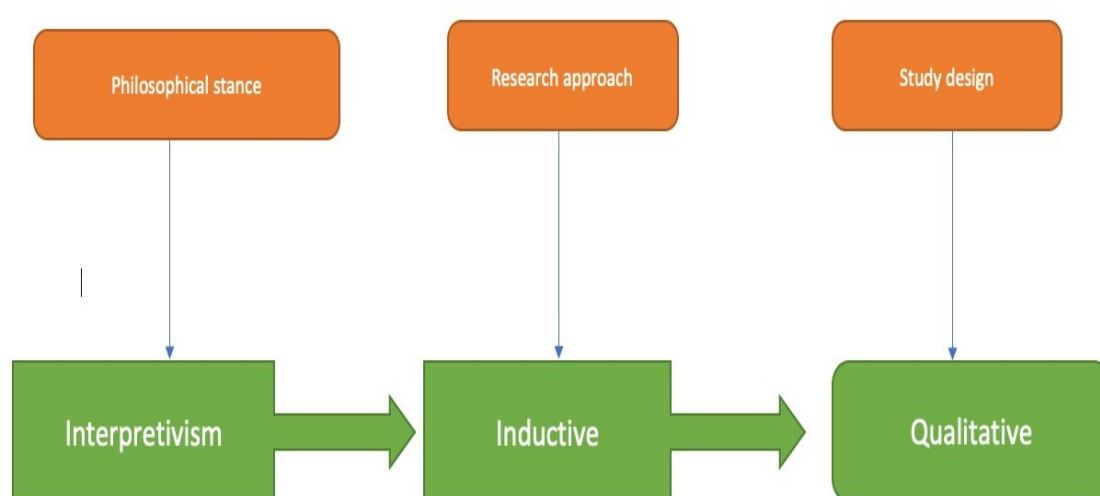


Figure 4: Philosophical and methodological framework

3.2.2 Ontology

Ontology is a branch of philosophy that is defined as the “nature of reality” of a social phenomenon (Crotty, 1998; Bryman and Bell, 2013; Creswell, 2013) or how individuals perceive reality (O’Gorman and MacIntosh, 2015). Therefore, ontological assumptions are a researcher’s ideas about the world or a social phenomenon (Crotty, 1998; Denscombe, 2010).

Realism and relativism are typical ontological stances in biomedical studies (Denscombe, 2010; Braun and Clarke, 2019). Realists argue that a single objective reality exists, which can be assayed by experimental methods to reach universal conclusions. This is clearly evident in mathematical abstractions used in STEM fields, but the realist contention of a single objective reality is often problematic when it comes to investigating human social and subjective phenomena. Realists content that a single social reality exists, regardless of whether others believe in its existence, and that this reality can be measured (Denscombe, 2010). This shows

that realists frequently interpret the world objectively. Consequently, the realist ontological perspective frequently underpins quantitative research (Braun and Clarke, 2019).

Relativism, on the other hand, contends that reality is subjective and does not exist apart from the human mind (Denzin and Lincoln, 2017). In other words, many realities exist, and are frequently manufactured (by subjective human perceptions and interpretations) (Cromby and Nightingale, 1999). For example, multiple different women may have different subjective experiences of pregnancy and childbirth care, even within the same healthcare unit and from the same HCPs. Consequently, to study (and seek to improve) healthcare service delivery contexts, especially from a client-centred perspective, it is necessary to adopt and develop ways to study and understand service users' individual experiences and perspectives. Researchers wishing to understand such subjective experiences adopts the relativist viewpoint, which guides the majority of qualitative research (Braun and Clarke, 2019), including the current study, which aims to understand the realities existing in parents regarding access to NS for HL.

3.2.3 Epistemology

Epistemology is defined as the branch of philosophy concerned with the nature and type of knowledge that exists about a phenomenon, as well as how a researcher can come to grasp such a reality (Crotty, 1998; Cohen, Manion and Morrison, 2007; O'Gorman and MacIntosh, 2015). Important to an epistemological perspective is the notion that people's experiences and interpretations of a phenomenon come from their interactions with their environment (O'Gorman and MacIntosh, 2015). Objectivism and constructivism (also called subjectivism) are the typical epistemological assumptions in research, associated with the realist and relativist ontological perspectives (respectively) (Crotty, 1998). Crotty (1998) defines objectivism as the conviction that meaning, and reality exist apart from human thought. The objectivist viewpoint asserts that removing human interference from the event under study can facilitate the finding of genuine truth. Consequently, the capacity to acquire information is objectified.

The epistemological position of constructivism believes that the human mind forms the social reality based on how individuals experience it. Thus, individuals create subjective interpretations of their experiences through interactions with others (Crotty, 1998; Creswell, 2014; Denzin and Lincoln, 2017). This view posits that social reality is subjective rather than objective, and that it may be produced repeatedly if people continue to build it and interact with others in their environment (Crotty, 1998; O'Gorman and MacIntosh, 2015).

Some scholars argue that ontological and epistemological assumptions are intricately intertwined and not necessarily distinct (Crotty, 1998; Braun and Clarke, 2019). Therefore, epistemological and ontological assumptions are frequently employed in research to demonstrate the researcher's philosophical basis for the approach (Crotty, 1998; Fossey *et al.*, 2002; Denzin and Lincoln, 2005).

3.2.4 Diverse Philosophical Approaches to Research

On the basis of a researcher's ontological and epistemological perspectives, there are various philosophical orientations. Positivism, interpretivism, and pragmatism are prevalent philosophical viewpoints (Crotty, 1998; Creswell, 2014; O'Gorman and MacIntosh, 2015). Positivism implies that one can acquire knowledge by scientific investigation and measurement (Weaver and Olson, 2006; Creswell, 2014). A central tenet of positivism is that there is one version of reality that exists independently of the researchers (O'Gorman and MacIntosh, 2015), and that the researchers do not influence the study environment and vice versa (Scotland, 2012). Therefore, positivists frequently employ quantitative research designs to study correlations between variables and test hypotheses using techniques such as closed-ended surveys and statistical data analysis (Creswell, 2014).

However, other scholars say that the positivist viewpoint's rigidity gave rise to post-positivism, which opposes the positivist concept by separating the researcher from the phenomenon being studied (Cohen, Manion and Morrison, 2007; Patton, 2014). The criticisms of positivist assumptions spawned philosophical perspectives that do not accept these beliefs. In contrast to positivism, interpretivism asserts that a person can acquire knowledge through the social construction of a reality (Myers, 2008; Green and Thorogood, 2018).

Interpretivists think that there are numerous realities and interpretations of the social world, and as a result, a researcher can get subjective insight into a social phenomenon (Denzin and Lincoln, 2017). Consequently, this perspective is frequently suited to qualitative research. There are difficulties surrounding the study application of positivism and interpretivism, Pragmatism, which stands between interpretivism and positivism, was spawned by such disputes on the most applicable philosophical approach to inform a study (Creswell, 2014).

Seeking to transcend the doctrinaire straightjackets of positivism or interpretivism, pragmatists think that a researcher can pick the best appropriate theoretical perspective for a topic (Morgan, 2007; Creswell, 2014). Pragmatism permits the use of any method of data collecting that is appropriate for a study's aims (Morgan, 2007; Creswell, 2014). Creswell (2014) stated further that the aforementioned philosophical positions are not necessarily as distinct as they

appear. Since their application in research is frequently controversial, they should not be treated as inflexible concepts.

3.2.5 This Study's Philosophical Perspective

Different philosophical perspectives support research, providing the researcher with a conceptual lens to apply to a subject. Some authors have stated that, in order to adopt an appropriate research methodology, a philosophical perspective that aligns with the researcher's beliefs about the nature of reality should be adopted (Crotty, 1998; Snape and Spencer, 2003). This study covered positivism, interpretivism, and pragmatism among the numerous philosophical approaches. From the explanation, it appears that pragmatism is inadequate for the current study since pragmatists believe that a researcher may embrace whatever philosophical position, they deem appropriate for a study (Morgan, 2007; Creswell, 2014).

Positivism does not appear to be a good fit for this study, because it implies that the world exists apart from the researcher (O'Gorman and MacIntosh, 2015). However, parental attitudes and views of access to NNHS vary based on context, personal expectations, and viewpoints (McMahon *et al.*, 2014). The positivist viewpoint restricts the extent to which it can integrate the subjectivity of parents' attitudes, perceptions, and HCPs' points of view and provide an understanding of NNHS. Another drawback is that the core positivist position says that an interesting phenomenon may be objectively measured (Creswell, 2014).

However, the positivist perspective is likely to reduce the quality of the results because it provides only numerical descriptions and not detailed accounts of the parents' perspectives. In addition, it suggests that the descriptions may not accurately reflect parental attitudes and perceptions regarding NNHS. Consequently, the application of the philosophical stance poses a challenge for the current investigation. Using a positivist approach would necessitate measuring and quantifying the experiences and perspectives of parents, which may not comprehensively capture the depths and accounts of parents and HCPs. Existing studies lack a perspective that allows parents and HCPs to provide detailed accounts of their perceptions and perspectives regarding access to NNHS in Port Harcourt. Therefore, the positivist approach is unsuitable for the current study.

Qualitative research methodology is defined as the structure or general approach to conducting research (Creswell, 2014; Braun and Clarke, 2019). It involves the "how," "why," "what," and "when" when conducting a study (Guba and Lincoln, 1994; Crotty, 1998). Methods are techniques used to study a phenomenon, collect and analyse data, and draw conclusions (Crotty, 1998; Braun and Clarke, 2019). However, other authors have argued that the

suitability of a research methodology is determined by the purpose of the study, the researcher's philosophical perspective, and their own research interests (Taylor, Bogdan and DeVault, 2015).

A research methodology entails integrating the various stages of an investigation in a methodical manner to solve the research problem. This means that research designs serve as the blueprints for collecting and analysing data in order to achieve the research objectives. Although there are controversies regarding the most appropriate research design that aligns with interpretivist assumptions, Creswell (2014) asserts that it is the basis of qualitative methodology. Qualitative research has its roots in sociology, psychology, anthropology, and the humanities, among others. It focuses on the significance individuals attribute to social phenomena (Fossey *et al.*, 2002; Denzin and Lincoln, 2017).

This research methodology is appropriate for gaining insight into the lives and experiences of individuals (Creswell, 2014). Defining qualitative research is frequently difficult due to the influence of history and various philosophical perspectives. Denzin and Lincoln (2013), however, describe it as a term that encompasses a broad range of interpretive techniques that enable the comprehension of a phenomenon. Therefore, it entails the application of interpretive frameworks to study a phenomenon and comprehend the meaning that people attribute to that phenomenon in a natural setting, without interfering with or altering the setting (Creswell, 2013; Patton, 2014; Denzin and Lincoln, 2017).

This research design focuses on understanding individuals based on their actual experiences (Corbin and Strauss, 2008). Consequently, qualitative researchers are frequently empathetic and identify closely with their study participants. According to Corbin and Strauss (2008), the interpretive perspective is central to qualitative research. However, Denzin and Lincoln (2018) contend that there are no paradigms or theories that are inextricably linked to qualitative research, despite the fact that a number of philosophical perspectives claim the applicability of this research design.

Numerous authors argue that qualitative research is inductive by design (Creswell, 2014; Merriam and Tisdell, 2015; Green and Thorogood, 2018). In the inductive method, a researcher begins with a research question, collects data, but is uncertain of the results (Merriam and Tisdell, 2015; Taylor, Bogdan and DeVault, 2015). However, some authors have argued that pure induction in qualitative research is not possible. They contend that it is impossible to completely abandon one's worldview assumptions and prior knowledge of existing theories (Gray, 2014; Merriam and Tisdell, 2015). The inductive method does not seek to confirm a theory; rather, it attempts to extract patterns and themes from collected data to

gain insight into a phenomenon (Creswell, 2014; Green and Thorogood, 2018). This allows qualitative researchers to adopt a versatile (and potentially responsive or dynamic) methodology (Marshall and Rossman, 2011).

In addition, qualitative researchers do not view people and environments as variables, but rather as integral components. When individuals are reduced to variables, the significance of their social lives may be lost, so the researchers base their research on perceptions and experiences (Marshall and Rossman, 2011; Yin, 2011). However, like other research designs, qualitative research has limitations. Due to the typically small sample size in qualitative research, it is challenging to generalise the findings to a population with similar characteristics (Creswell, 2007; Patton, 2014).

The most common research paradigms are quantitative and qualitative research, neither of which is inherently superior to the other; rather their suitability, and the potential for combining them (as discussed below), depends on the context of individual studies and what they hope to achieve (Morse, 1991; Johnson and Onwuegbuzie, 2004). Depending on the research question, qualitative research adopts an interpretivist ontological position, whereby multiple social realities are constructed by human actors; this is the basic reason this was chosen for the current inquiry. Conversely, qualitative methods can enable inductive analysis to interpret rich, thick, descriptive data to yield insights into complex interpersonal phenomena (Kitto, Chesters and Gribich, 2008; Creswell, 2009). The quality of data required for this purpose, in order to successfully achieve the study aim, depends on the included participants being relevant to answering the research question (i.e., their suitability as per inclusion and exclusion criteria, calibrated to the objectives of the research) (Carter *et al.*, 2014; Creswell and Creswell, 2017). The following section describes the different approaches of qualitative studies, and the most suitable approach applied to explore the perceptions of parents and HCPs.

3.3 Diverse Qualitative Research Approaches

Creswell (2013) outlined five main qualitative research methods: phenomenology, ethnography, grounded theory, case studies, and narrative inquiry. There are numerous similarities between these five qualitative approaches. A case study approach can be used to gain an in-depth understanding of a case, which may be a small group, an individual, or an organisation whose characteristics include time and place (Yin, 2009; Creswell, 2013). The case serves as the analytical unit, and themes are developed and presented case-by-case (Yin, 2009). This approach did not appear applicable in this research, which does not investigate a real-world case or multiple cases in progress (Creswell, 2013).

An ethnographic approach focuses on developing a detailed description of a population that shares a culture (Creswell, 2013). The cultural groups are frequently large and composed of people who share similar beliefs and have interacted for an extended period. In certain circumstances, the cultural community of interest may consist of a small group of individuals. Ethnographers observe, record field notes, and conduct interviews to comprehend a cultural group's phenomenon of interest (Creswell, 2013; Campbell and Lassiter, 2015). Participant observation is one of the most commonly employed methods in ethnography, but it was not feasible for this study for various reasons. For instance, people can behave differently when being observed, and the purpose of this study is to determine their attitudes toward screening their newborns for HL, which is nearly impossible to determine through observation alone.

Grounded theory permits the generation of hypotheses of processes, interactions, or actions from the data in order to provide insight into a variety of phenomena and generate a theory (Corbin and Strauss, 2008; Creswell, 2013). Interviews are one of the primary data sources the grounded theory researcher uses, to continuously compare the data to the developing theory. This qualitative method was inappropriate for the present study, as it did not seek to generate a theory. Narrative researchers seek to comprehend and then present real-world experiences through the participants' narratives (Wang and Geale, 2015).

Inquirers interested in narratives are not primarily interested in the facts or veracity of these accounts, but rather in the meanings portrayed in story form. The purpose of a storyteller's narrative is to convey a particular *interpretation* of an event (i.e., the *meaning*, and not necessarily the "*truth*"), which is communicated through narratives. In contrast to objective, decontextualised truths, the objective of narrative inquiry is to reveal the meanings of individuals' experiences (Bailey and Tilley, 2002; Wang and Geale, 2015). This approach is not apt for the current study, as the researcher aims to explore the true attitudes and perceptions of parents and HCPs to access to NS for HL.

Phenomenology derives from both philosophy and psychology and enables the study of the "lived experiences" people attribute to a social phenomenon (Schram, 2003; Patton, 2014). In this approach, the researcher attempts to convey the significance of an experience by capturing how individuals perceive, describe, and make sense of it (Patton, 2014). A researcher accomplishes this by analysing a group of individuals who have experienced a particular social phenomenon, such as loneliness, pain, or grief (Creswell, 2013; Patton, 2014; Green and Thorogood, 2018). However, phenomenology has different schools of thought, described as "transcendental" and "hermeneutic" phenomenology by Creswell (2013).

The transcendental approach, as per Husserlian phenomenology, is a narrative approach that focuses on revealing people's "lived experience" without incorporating the researcher's preconceptions (Bannister *et al.*, 2011; Green and Thorogood, 2018). The researcher brackets his or her own personal and professional assumptions, conceptualisations, and philosophical frameworks that might influence the participants' descriptions of the phenomenon of interest (Green and Thorogood, 2018). Hermeneutic phenomenology is an interpretive approach that focuses on how people construct their experience of a phenomenon in order to explicate the significance of the participant's reported account (Bannister *et al.*, 2011).

This approach, according to Lopez and Willis (2004), is not always an accurate description of people's "lived experience," but rather focuses on what the reported accounts imply. Hermeneutic phenomenologists believe that social structures impact the "lived experience" of individuals. Therefore, a researcher employs any prior knowledge or experience to direct data interpretation (Bannister *et al.*, 2011). Through a process of reflexivity, the researcher engages continuously with any prior knowledge to guide or shape the understanding of an experience. Consequently, adopting a philosophical framework for research using this method is typical (Bannister *et al.*, 2011).

Individual in-depth interviews are the most common method of data collection, and the researcher approaches the participants and setting with an open mind (Giorgi, 2009; Creswell, 2013). According to the research objectives, the meaning of a phenomenon is derived from the collected data (Bannister *et al.*, 2011). However, because this approach does not emphasise "lived experience" (i.e., the lived experiences of parents of newborns with HL), this approach is unsuitable for this study, which is primarily aimed at pregnant women, parents of newborns, and HCPs without a phenomenon (without HL or children with HL) (Patton, 2014).

Interpretivist research has become increasingly prevalent in health and social sciences research, including to understand health behaviour (Yardley, 2000; Creswell, 2009; Abubakar *et al.*, 2013; Adesoro *et al.*, 2016; Sturrock *et al.*, 2019). The most essential characteristic of qualitative research is that it explores the *meaning* that people associate with researched phenomena, rather than the basic quantification possible using quantitative methods (Pope and Mays, 2006; Green and Thorogood, 2018; Sturrock *et al.*, 2019). Qualitative research can help bring clarity to poorly understood issues (e.g., research issues about which little is known, potentially identifying areas for future quantitative investigation), bringing more accuracy and coherent understanding of otherwise nebulous and ill-defined concepts and phenomena (Greenhalgh and Wengraf, 2008; Kitto, Chesters and Gribich, 2008; Creswell, 2009).

In this regard, qualitative research has massively developed research on health and social behaviour issues, including screening and treatment compliance (Bollini *et al.*, 2004), health-seeking decisions (Shaw *et al.*, 2008), the decisions made by healthcare workers (Bee *et al.*, 2015), and cases of patient perceptions of clinical issues like osteonecrosis of the jaw (ONJ) (Sturrock *et al.*, 2019), and (most relevant to this study) in studies of NS for HL (Jatto *et al.*, 2018). However, it should be noted that qualitative methods also have their drawbacks, the most obvious of which is their limited representation of studied populations. Generally, the conclusions arising from the interpretation of qualitative research cannot be transposed and applied more generally, and for other (non-specific) contexts (i.e., for any context other than the narrow population from which the in-depth data was sourced) (Sturrock *et al.*, 2019).

Qualitative research provides depth at the expense of breadth; conversely, the conclusions of quantitative research are much more broadly applicable, but they generally lack in-depth insights into complex phenomena (Carr, 1994; Murphy *et al.*, 1998). The larger samples used in quantitative inquiries also make their findings intrinsically more representative of larger populations (Creswell and Creswell, 2017). However, the current investigation is not concerned with generalisation *per se*; rather it seeks to probe in-depth and subjective perceptions and experiences of participants relevant to health behaviour concerning NS for HL. Aiming to explore this, a qualitative approach is the obvious choice of design for this research.

Practically, qualitative research is time-consuming and potentially expensive, due to the nature of associated methods (e.g., meeting with each individual participant in certain times and/or places to conduct in-depth personal interviews) (Tetnowski, 2015). It therefore depends on qualitative researchers to design their field methods with the utmost care and forward planning, including mitigation strategies for potential practical difficulties (or new opportunities) that may arise during the fieldwork process (Creswell and Creswell, 2017).

In the current study, the pertinent quantitative phenomena – i.e., lack of access to NS (i.e., parents not engaging in NS) in relation to HL – is already well understood *a priori*, thus there is no need to make this an intrinsic part of the research methodology in itself. Rather, this study seeks to identify reason for this quantitatively acknowledge phenomenon – to explore the reasons *why* this is happening, as it is already established *what* is happening. As Green and Thorogood (2018) emphasised, the most appropriate methods are those which answer the research question, which in this study supports the use of qualitative research.

3.4 Rationale for Choice of Qualitative Study Method: Face-to-Face (F2F) Interviews

One of the most effective qualitative research approaches for interpretive research is in-depth, F2F interviews with multiple participants, by which the researcher can probe the experiences of experts in the related area (i.e., people with extensive experience or personal knowledge of the phenomena of interest), following a general guide to avoid digressing, while allowing for the possibility of emergent and unforeseen data to be disclosed concerning relevant phenomena. The subsequent inductive analysis and interpretation of this data, following scientific principles, can yield actionable insights to inform decision-makers and future researchers (Sandelowski, 2000; Thorne, Kirkham and O'Flynn-Magee, 2004).

In this respect, the current study seeks to explore the attitudes and perceptions of parents and healthcare stakeholders to access to NS for HL, in order to ultimately generate evidence-based conclusions that can help decision-makers to formulate more effective public health strategy and policy for NS for HL in Nigeria. All qualitative methods begin with the identification of a research problem, followed by the formulation of a research question, the collection and analysis of data, and the presentation of findings. In addition, some of the data collection methods include interviews, documents, observations, and audio-visuals, although the extent to which these data collection methods are employed varies across qualitative approaches (Creswell, 2013).

This qualitative inquiry utilises inductive approach that utilises rich contextual data on participants' attitude and perceptions (Stannard, 2012). In this approach, researchers immerse themselves in participant contributions (i.e., raw data) in order to identify emergent themes (McCoy, 2017). Qualitative study has the key benefit of being a broad and flexible approach, enabling participants to narrate their perception and experiences in detail in their own words, allowing emergent areas to be identified and probed by the researcher that may not have been foreseen during the planning of the research (Schwandt, 1999; Stannard, 2012).

Some studies have utilised a quantitative questionnaire-based approach to assess attitude and perceptions (Olusanya and Solanke, 2009; Dudda *et al.*, 2017; Govender and Khan, 2017; Ravi *et al.*, 2017; Akinola *et al.*, 2018). This approach is useful because it gives the researcher an opportunity to recruit large samples of participants to get a generalisable view of the event (Gabriel *et al.*, 2019). However, this limits the researcher's ability to probe and delve into the personal views of the participants, which frequently unfold in directions that could not have been anticipated at the research planning stage.

Qualitative interviews are vulnerable to bias on the part of participants as well as researchers, and the latter must endeavour to mitigate potential sources of bias (DeVon *et al.*, 2007). Consequently, the researcher attended some training (see Appendix 1) in interview processes (theory and practice of qualitative research) relative to the designed protocol prior to administering the actual interviews, in order to develop interviewer skills in delivering questions with due sensitivity, allowing interviewees to narrate their own original contributions with minimum distortion, in a natural setting (Creswell, 2007).

Interviews are a data collection method utilised in both qualitative and quantitative research (Bryman, 2012). Some qualitative researchers believe that interviews are similar to everyday conversations that are captured in a more rigorous manner in order to achieve the researcher's objective (Patton, 2014). They are widely used in health research data collection (Green and Thorogood, 2018). Structured, semi-structured, or unstructured interviews are possible (Polit and Beck, 2021; Flick, 2009, 2018). According to Bryman (2012), structured interviews, also known as standardised interviews, are verbal questionnaires with predetermined questions administered to survey participants. The interview researcher intends to conduct these interviews in a standardised fashion to ensure high levels of repeatability, reliability, and consistency in the findings (Bryman, 2012; David and Sutton, 2011).

Typically, in structured interviews, the questions are closed-ended, and there are no follow-up questions for further elaboration of responses (Bryman, 2012; Berg, 2009). Consequently, structured interviews are frequently simple and quick to conduct. However, there are some limitations to this type of interview. For instance, structured interviews permit a limited set of responses, thereby limiting the depth of the information if "depth" is required (Bryman and Bell, 2013). Structured interviews were not appropriate for the present study because the depth of the participants' understanding, and perspectives may not have been fully understood. Unstructured interviews typically do not reveal any preconceived notions and are frequently conducted in a less organised manner (Merriam, 2009).

Unstructured interviews can typically begin with an open-ended question and progress based on the initial responses (Bryman, 2012; Braun and Clarke, 2019); therefore, they are frequently participant-led. Due to a lack of organisation and predetermined questions and probes, they can last for a number of hours. This type of interview would not have been suitable for the present study, as it was designed to investigate a preconceived phenomenon: parents' attitudes and perceptions regarding NNHS, with specific aims. The section that follows provides a detailed discussion of another type of qualitative interviews, semi-structured interviews, as well as a justification for employing them in the current study.

F2F interviews are best placed to achieve the objectives of this study, because it is efficient in gathering an in-depth, subjective, personal perception and experiences of participants while allowing some flexibility for the researcher to probe emergent areas of interest and allowing participants some freedom to answer in their own ways, while avoiding irrelevant digression (Douglas, 1986).

Some qualitative studies adopted structured open-ended focus group interviews to assess attitude and perceptions. For example, Gajjar (2017), adopted the structured open-ended focus group interviews to assess attitude and practice of stakeholders. This approach creates room for the interviewer to get a robust understanding of the participants experience. However, due to the open nature of the procedure, it restricts interviewers from digging deeper into the participants (Arnold *et al.*, 2006).

In this study, the researcher seeks to get a deeper understanding of the participants' views. Therefore, a semi-structured individual interview was applied. The individual in-depth F2F interview will offer the interviewer an opportunity to dig deep into social and personal issues (Arnold *et al.*, 2006). Many previous studies relating to NS for HL utilised qualitative semi-structured, F2F interviews to assess attitudes and perception using semi-structured study guide (Steinberg *et al.*, 2007; Daryani *et al.*, 2016; Kelly *et al.*, 2016; Grandpierre *et al.*, 2017; Kasper *et al.*, 2017). Semi-structured interviews are normally used when the interviewer has only one opportunity to interview someone or a group of people and can last between thirty minutes to several hours (McIntosh and Morse, 2015; Gabriel *et al.*, 2019).

Conversely, focus group interviews usually offer less in-depth information because of social dynamics in such groups, which can be dominated by certain commandeering members. Also, participants may be reluctant to speak as fully and frankly as possible concerning individual issues, due to the presence (and implied judgment) of other focus group members, which often results in consensus outcomes (Carter *et al.*, 2014; Fusch and Ness, 2015). Additionally, members can drift into digressions and be diverted from issues relevant to the study, or even start arguing among themselves (Breen, 2006). Consequently, focus group tends to yield relatively superficial data concerning researched phenomena compared to individual interviews (Coombes *et al.*, 2009; Mears, 2012).

In qualitative health research, semi-structured interviews are one of the most common methods of data collection (Green and Thorogood, 2018). The interviews are in-depth, verbal conversations between a researcher and an interviewee (Patton, 2014; Morris, 2015). The researcher schedules the topics to be covered, and the responses of the interviewees determine the nature of the information obtained on the topic of interest (Green and

Thorogood, 2018). A researcher can investigate the detailed experiences and social constructs of a phenomenon using semi-structured interviews (Creswell, 2007; Yeo *et al.*, 2014).

According to Yeo *et al.* (2014), F2F interviews provide a solid foundation for a positive relationship between the researcher and the interviewee. It creates an environment in which the interviewee can respond to the researcher, who is able to observe nonverbal expressions. Even though F2F interviews are labour-intensive, they are one of the best ways to collect high-quality information (Merriam, 2009). Other authors suggest using in-depth interviews for data collection if potential participants are hesitant to discuss their experiences openly in a group setting (Boyce and Neale, 2006).

The interviews seek to discover attitude and perception of parents and healthcare stakeholders to NS for HL process, pertaining to the perceptions and behaviours of parents on causes, detection, and treatment issues, including treatment-seeking and assistance networks, and attitudes toward these in the personal, family, and community contexts. Consequently, the selected method is justified with regard to achieving the research aims and objectives.

Based on the philosophical underpinnings described above, and the selected methods (described in more detail below), the conceptual model for this study is as summarised in Figure 5.

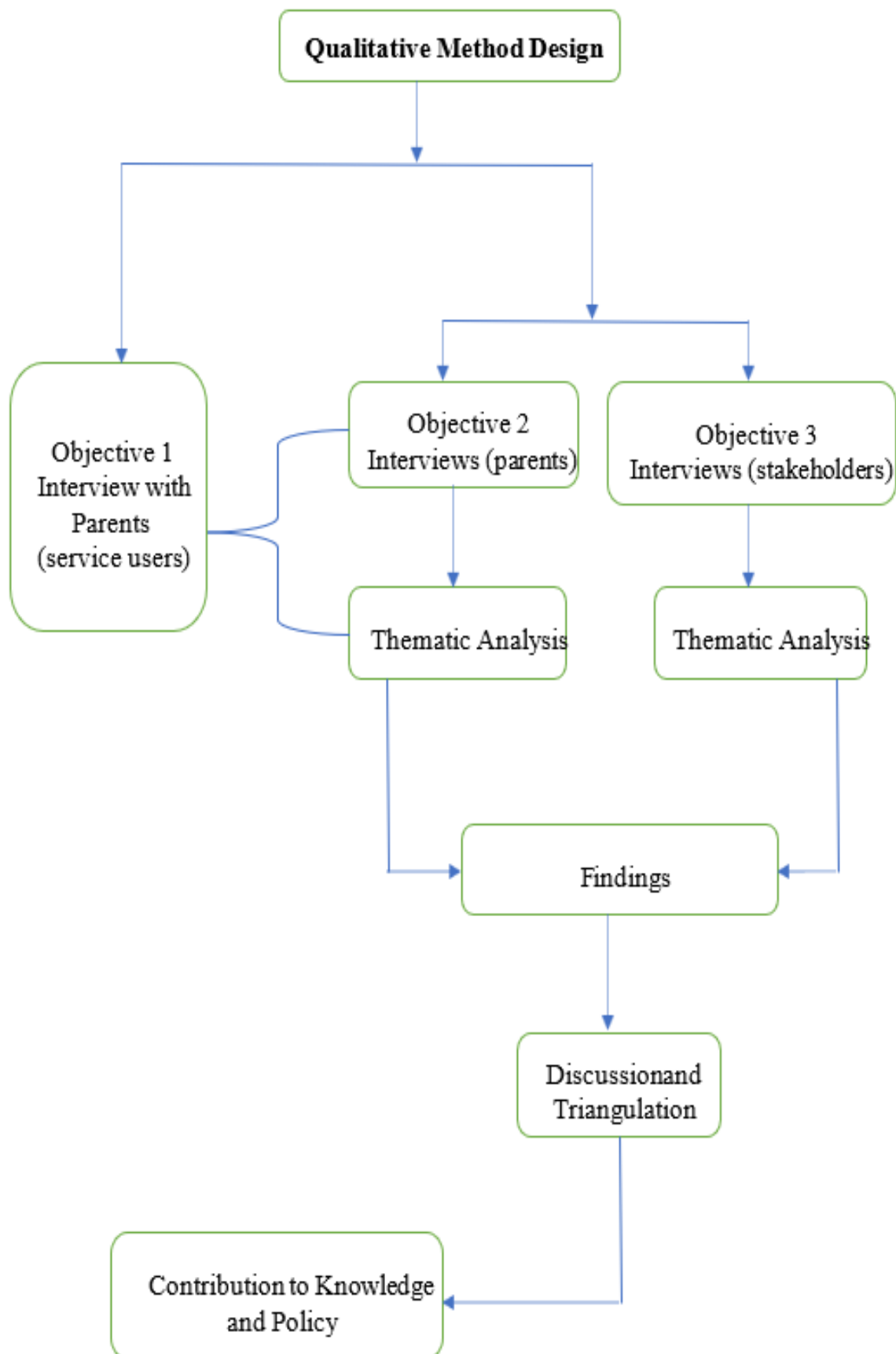


Figure 5: Conceptual model of the qualitative method design

3.5 Studied Context

3.5.1 Healthcare Services Profile

Traditionally, healthcare in Nigeria included the utilisation of locally available herbal treatment and traditional folk remedies. Under British colonialism modern pharmacology began to be applied, including in missionary hospitals and colonial government initiatives. Modern, professional health services were developed for the public from the 1950s onwards along the Western model, including strategies to contain disease. However, they continued to be viewed as the preserve of elite urban dwellers, with little reach into rural areas prior to the 1960s (Mudiyarabikwa *et al.*, 2017).

Following independence, local, state, and federal governments devised a three-tier system for healthcare provision, subject to the Ministry of Health at all levels, comprising basic primary healthcare centres administered at the local level, followed by general hospitals operated by state governments, with ancillary services such as diagnostics, blood banks, laboratories, rehabilitation, and physiotherapy services (Ademiluyi and Aluko-Arowolo, 2011). The top level is tertiary health institutions, which deal with specialised referrals from the lower levels, which are administered by state and federal governments, including specialist and educational hospitals concerned with obstetric, ophthalmologic, orthopaedic, paediatric, and psychiatric cases (Oluwabamide, 2011).

Most citizens mainly interface with primary health care centres at the local level, particularly in rural communities, and these centres provide a wide array of support and services to local communities, including family planning, immunisation, health education, and reproductive health (Ademiluyi and Aluko-Arowolo, 2011). It should be noted that Nigeria is an example of the pitfalls of extreme decentralisation of community health services in the developing world (So *et al.*, 2016). Many local health centres are privatised, and indeed federal government spending on health shrank from almost 4% in the 1970s to under 2% in the 1990s (Mathias and Amasiatu, 2015). Net spending on health in 1991 was 44% of the 1981 level, and hospitals were close to collapse, with medication and equipment shortages, poor maintenance, and abysmal morale among HCPs, problems which continue to pervade health institutions in the country, given population growth of 3% annually and a dearth of necessary health investment (Chukwuani *et al.*, 2006; Raji, 2018).

Clinics, diagnostic centres, hospitals, maternity homes, and pharmacies operate private health centres that are largely restricted to wealthy urban residents for general healthcare purposes, while according to studies conducted in Lagos and Enugu Nigeria on the use of traditional and complementary medicine (TCM) shows that most of the population (61.9% and 65.0%

respectively) resort to traditional healers using herbal and spiritual remedies, and complementary medicine (herbs, faith healing, prayer healing, etc.) (Onyiapat, Okoronkwo and Ogbonnaya, 2011; Oreagba, Oshikoya and Amachree 2011; WHO, 2019a, 2019b, 2019c). Egharevba *et al.* (2015) reported that the vast majority (86%) of Nigerians use TCM, which is offered by over 200,000 practitioners, despite such healers not being registered sources of treatment. This high prevalence was also noted by Adekannbi (2018) and Wada *et al.* (2019).

It has been observed that such non-standard resources, which are often relatively harmless (and even clinically beneficial) as *complementary* therapies (alongside mainstream medicine) in developed countries, are used as the default source of care for serious health issues in Nigeria, including common illnesses such as malaria, family planning, fever, HI, HIV/AIDS, mental or neurological illnesses, obstetric care, and tuberculosis (Lam, 2013; Foster and Souvignier, 2014; WHO, 2019a, 2019b, 2019c). People commonly use a combination of “modern” and traditional solutions, when possible, often following trial-and-error and the experiences of others (Cashmir Ebirim, 2016).

People are more likely to seek spiritual healing when they believe a health problem is due to spiritual causes (Ugwu and Enah, 2016). TCM is generally encouraged by WHO (2019a, 2019b, 2019c) as long as it does not undermine the efficacy of mainstream medical treatment, but in Nigerian health discourse, the predominance of the traditional Western biomedical paradigm means that such practices are typically viewed condescendingly by HCPs. Furthermore, there is no effective regulation of standards among traditional practitioners in Nigeria, and malpractice is rampant (Chinwe, 2018; Ugwu and Enah, 2016; Asuzu *et al.*, 2015).

Nigeria reflects the common picture of developing countries in having minimal government spending on health expenditure; Nigeria and India both have 25%, compared to 45% in the USA, with the highest levels in Europe and Japan with over 80% (Olusanya *et al.*, 2007). In the case of the US, 24% of the net 55% private expenditure on health is out-of-pocket, compared to 76% in Nigeria. Out-of-pocket conditions health services access on the ability to pay, thus it is intrinsically inequitable, and given the entrenched neoliberal policies of Nigeria this is not likely to change any time soon. Public-private initiatives could be encouraged, as part of the new National Health Insurance Scheme (NHIS).

Many health problems in developing countries such as Nigeria are due to malnutrition, overcrowding, poor hygiene and insanitary toilets, and the unavailability of access to potable, safe water. Health facilities are intermittently overwhelmed by epidemics such as diphtheria,

HIV/AIDS, malaria, meningitis, and tetanus. The infant and under-five mortality rates in Nigeria are 101 and 197 per thousand live births, making it one of six countries accounting for 50% of total child deaths globally (EA, 2017). Nigeria is also unfortunate in recording the greatest global rates of children who are developmentally disadvantaged (GranthamMcGregor *et al.*, 2007).

Numerous international initiatives led by the World Bank, the UN (particularly UNICEF), WHO, and other donor organisations aim to combat these challenges (United Nations, 2019). The main priorities of such initiatives are putting out fires in terms of fatal and communicable diseases, but there is nascent acknowledgement of the importance of addressing non-communicable and chronic diseases, generically incorporating congenital abnormalities and sensory disorders (Ruchman *et al.*, 2016; WHO, 2019a, 2019b, 2019c). This includes attention to childhood HI, which was earmarked as a major priority in the Millennium Development Goals (Olusanya, Ruben and Parving, 2006).

3.5.2 Selecting Port Harcourt, Nigeria

This study was conducted in Port Harcourt, Nigeria. There were four main reasons for selecting Port Harcourt, including that it is the capital city of Rivers State (see Figure 6), and is one of the most populated Nigerian cities, as a result of urbanisation in the area (the others major cities in Nigeria are Lagos, Abuja, Kano, Katstina, Ibadan, and Benin) (Nduka, Aitafo and Nduka, 2014; Enekole *et al.*, 2017).



Figure 6: Map of Rivers State showing Port Harcourt (in grey)

Source: Enekole *et al.*, (2017)

A review of the existing evidence base highlights that although there have been studies conducted on screening for NHL in other states/cities in Nigeria, there has hitherto been no study carried out in Port Harcourt on parental attitude and perception and the views of health care stakeholders regarding NS for HL (Olusanya, Luxon and Wirz, 2005; Olusanya, 2008, 2009; Olusanya and Solanke, 2009; Lasisi *et al.*, 2014; Akinola *et al.*, 2018; Jatto *et al.*, 2018; Labaeka *et al.*, 2018).

Additionally, Rivers State includes 23 local government administrative areas, in which numerous local dialects and languages are found. English is commonly used as the *lingua franca* of Port Harcourt, which also facilitated the choice of Port Harcourt, as this would avoid any potential dialect/language communication barriers.

The researcher has lived and worked in Port Harcourt, and has extensive connections with healthcare stakeholders and policy makers, which helped with regard to accessing target participants. The researcher is the President of a fully registered NGO named the Joedd Foundation for Hearing Impaired Persons, which is focused on the provision of skill acquisition, Teaching of American Sign Language, creating awareness on healthy living and general well-being of the deaf community. This NGO also partnered with the Nigeria Medical Association (Rivers State Chapter), through provision of interpretation in American Sign Language during outreaches or sensitisation opportunities.

3.6 Data Collection Procedures

This section discusses the sampling, data collection techniques, and their justifications. There are various data collection methods used in research. As stated previously, the epistemological position influences the research questions, and the research questions determine the methodology and methods used in a study (Crotty, 1998; Denzin and Lincoln, 2017). Consequently, the interpretive paradigm, research objectives, and qualitative methodology influenced the data collection techniques employed in this study. In addition, the strengths and weaknesses of the data collection tools were taken into account. According to Green and Thorogood (2018), the data collection methods should be able to collect information pertinent to answering the research question. To achieve the purpose of the present study, appropriate data collection instruments were utilised to provide a comprehensive understanding of parents' attitudes toward NNHS. In this study, data were collected in a single phase using semi-structured interviews with parents and HCPs. These methods allowed for a comprehensive examination of the study participants' comprehension and perceptions of NNHS.

3.6.1 Sampling

3.6.1.1 Techniques

Sampling in research is the procedure of identifying the study population from which a study sample is drawn (Salazar, Crosby and DiClemente, 2015). A sample is intended to be representative of the entire studied population, whereby all participants are given an equal opportunity to determine their participation eligibility (Nick, 2013; Salazar, Crosby and DiClemente, 2015). The selection of a sampling method — probability or nonprobability — is frequently determined by the research objective. There are benefits to using probability sampling, such as the ability to generalise research findings. However, according to Salazar, Crosby, and DiClemente (2015), the use of probability sampling in qualitative research may be rigorous, but not necessarily practical. Although qualitative research rarely aims to

generalise its findings, it frequently employs nonprobability sampling techniques (Salazar, Crosby and DiClemente, 2015). In qualitative research, non-probability sampling techniques are useful.

Theoretical, snowball, convenience, and purposive sampling techniques are common types. Several characteristics of these sampling methods enable a researcher to meet the objectives of the study (Nick, 2013; Polit and Beck, 2021). Convenience sampling, for example, is utilised when a researcher has access to participants based on their availability and location (Saumure and Given, 2008; Merriam and Tisdell, 2015; Polit and Beck, 2021). Salazar, Crosby and DiClemente (2015) suggest that when convenience sampling is used, it is crucial to consider how the participants adequately represent the study's population in order to ensure the validity of the results. Snowball sampling, also known as chain referral, is an additional technique that permits the researcher to request participant recommendations upon recruitment. This sampling method is frequently used to recruit inaccessible and vulnerable populations (Salazar, Crosby and DiClemente, 2015; Polit and Beck, 2021).

3.6.1.2 Objective and Participants

The participants included pregnant women, mothers with newborn children 0-6 months (because the research is newborn-related, these group of women were selected due to their experiences as expectant mothers or mothers with newborn), recruited from a government hospital, namely University of Port Harcourt Teaching Hospital (UPTH). This is the only tertiary care hospital situated in the heart of Port Harcourt with more than 500 hospital beds and mostly operates as a referral centre for specialist care for other hospital within the state and nearby states. The NHIS is also accepted in UPTH and it has a subsidised payment for those without insurance. This contributes to influx of people with different health condition in the state and neighbouring states (Frank-Briggs, 2012; NHIS, 2021). NS programmes, births and early-stage care are mostly carried out in this hospital. Therefore, this afforded access to parents who meet the criteria.

3.6.1.3 Justification for Purposive Sampling in This Study

The purpose of purposive sampling is to identify and recruit participants who possess certain characteristics essential to achieving the research objectives (Patton, 2014). Consequently, the application of this method is frequently dependent on the research question. Purposive sampling enables a researcher to gain an in-depth understanding of the investigated phenomenon (Bowling, 2002; Patton, 2014). As with the majority of non-probability sampling methods, the sample size from purposive sampling may not permit generalisation of findings, but it does provide information that answers research questions (Patton, 2014). In the current

study, HCPs were recruited using the technique of purposive sampling because it enabled the identification and recruitment of HCPs who provide in-depth information pertinent to answering the stated research question. A purposeful sample of HCPs with diverse characteristics, such as years of work experience and job titles, offers a variety of perspectives on NNHS in Port Harcourt.

3.6.2 General Considerations of Interviews

3.6.2.1 Overview

In the present study, parents and HCPs participated in individual, F2F, semi-structured interviews to gain an in-depth understanding of their experiences and perspectives on NNHS. Parents were approached and recruited during their routine visits to the health facilities for prenatal and postnatal care.

In qualitative and health services research, a *gatekeeper* is commonly defined as an individual who holds formal or informal authority within an organisation and who controls, facilitates, or regulates researchers' access to research sites, participants, and institutional resources (Hammersley and Atkinson, 2007; Green and Thorogood, 2018). Gatekeepers are particularly important in healthcare settings, where access to staff and patients is governed by ethical, organisational, and professional considerations. Their role is not merely administrative; rather, they act as custodians of institutional integrity, ensuring that proposed research aligns with organisational priorities, does not disrupt service delivery, and protects the welfare and rights of potential participants.

In the context of this study, permission to access participants within the UPTH was required prior to recruitment, making the identification and engagement of an appropriate gatekeeper essential. The Chief Nursing Officer (CNO) of UPTH was identified as the gatekeeper for this research. The CNO was considered an appropriate and legitimate gatekeeper due to their senior leadership role within the hospital, their oversight of nursing and midwifery services, and their central position within the organisational hierarchy. As the professional lead responsible for nursing practice across multiple departments, the CNO has comprehensive knowledge of clinical workflows, staff roles, and patient-care pathways, as well as the authority to permit external researchers to engage with nursing staff and related HCPs. This position also places the CNO at the intersection of clinical governance, workforce management, and patient safety, all of which are directly relevant to research involving HCPs.

The role of the gatekeeper in this study was multifaceted. First, the gatekeeper assessed the legitimacy, relevance, and feasibility of the research proposal, ensuring that the study objectives were compatible with institutional policies and clinical responsibilities. Second, the

gatekeeper facilitated formal access by granting permission for the researcher to enter the hospital setting and engage with potential participants, thereby legitimising the researcher's presence within the organisation. Third, the gatekeeper played a protective role by ensuring that staff participation was voluntary, ethically appropriate, and did not interfere with routine clinical duties. Importantly, while the gatekeeper enabled access, they did not influence participant selection, consent, or responses, thereby maintaining the autonomy of participants and the integrity of the research process.

Initial contact with the gatekeeper was made prior to data collection, and formal permission to conduct the study within UPTH was granted, as evidenced in Appendix 2 and Appendix 3. Following institutional approval, further administrative arrangements were made to support the practical aspects of recruitment. Specifically, upon gaining access to the hospital, the Head of Department and the CMD of UPTH respectively assigned a medical doctor and an administrative staff member to assist the researcher during the recruitment process. Their role was limited to facilitating introductions, identifying appropriate departments, and supporting communication with eligible participants, rather than directing or influencing participation. This structured approach to gatekeeping ensured that access was obtained in an ethical, transparent, and organised manner, consistent with best practice in qualitative health research.

The researcher approached women, fathers and soon to be fathers, verbally informed them of the study's purpose and pertinent ethical considerations and requested their participation. Participants were given a participant information sheet (PIS) (see Appendix 4) to help them comprehend the purpose of the study and a demographics form (see Appendix 5) to determine their eligibility. All eligible participants were given a consent form to sign during their next hospital visit to indicate their approval. Date, time, and location for the interview were selected by the researcher in consultation with each participant. The researcher also addressed any participant questions or concerns. To avoid confusion regarding the dates and times, the interview schedule was recorded in a journal.

The researcher ensured that all participants had signed and returned the consent form prior to each interview. Two of the interview participants were couples. However, they were interviewed individually and privately. This is to allow each participant to freely express their perceptions without leaning on the other's opinion. Additionally, to make all the participants feel more comfortable sharing their thoughts, an introduction to the interview's structure was provided. According to Creswell (2007), creating a comfortable environment enables the researcher to develop a good rapport with the participants, allowing for a fairly in-depth

disclosure of their experiences. All participants responded to the questions on the demographic information sheet (Appendix 5) that was provided to them.

The collected demographic information includes age range, gender, religion, interview location, and interview time. Throughout the interviews, the researcher upheld professional values such as courtesy and respect for the participants (Berg, 2009). In addition, the researcher ensured that maintaining such professionalism did not result in a power imbalance with the interviewees, but remained impartial throughout the interview session (Patton, 2014).

3.6.2.2 The Topic Guide

A topic guide is a document that contains the primary issues and subtopics a researcher wishes to investigate with study participants (Finch, Lewis and Turley, 2014). Frequently, it employs open-ended questions to guide data collection (Green and Thorogood, 2018). The procedure outlined by Bryman and Bell (2013) was followed to create the topic guide (Appendix 6 and Appendix 7) for this study. It included both closed- and open-ended questions based on the objectives of the study. In addition, evidence from previous studies (Alameddine *et al.*, 2017; Jatto *et al.*, 2018; Mwaka *et al.*, 2018) was helpful in developing the topic guide's questions. Although one study (Moyer *et al.*, 2014) was especially helpful in developing the structure of the topic guide for the present study, no questions were derived or modified from their guide.

Before the main data collection, the topic guide was piloted with two parents recruited for the interview and they were also informed about the pilot study. Piloting a topic guide verifies its suitability and clarity, allowing for any necessary modifications to be made to achieve the research objectives (Patton, 2014). Based on the responses of the two pilot study participants, the researcher made a few minor adjustments to the concepts for greater clarity and comprehension, but no substantial changes were required. As the discussion progressed, the researcher became familiar with the questions and referred to the guide to ensure that every topic was covered.

3.6.2.3 Researcher-Participant Relationship

It is vital that the interviewer forms a constructive connection with the interviewee during an in-depth interview. According to Douglas (1986), positive relationships are vital to the success of an interview, hence developing rapport with participants entails both respecting the participant and the information they share with the interviewer. Creating a rapport with the interviewees also creates a friendly atmosphere or environment for the participants to comfortably share their personal experience with the interviewer (DiCicco-Bloom and Crabtree, 2006). Previous studies' guidance was followed concerning establishing

connections to truths from the experiences of participants (Ruben and Ruben, 1995; Warren and Karmer, 2014), in terms of building relationships, with regard to apprehension, exploration, co-operation and participation between the interviewer and participants (Spradley, 1979; Crabtree and Miller, 1999).

3.6.3 Parent Interviews

A researcher's interview schedule, also known as an interview guide, is a list of questions he or she plans to ask an interviewee (Merriam and Tisdell, 2015). Typically, the nature of the questions included in an interview schedule depends on the interview's structure. Frequently, a semi-structured interview schedule includes adaptable and open-ended questions (Creswell, 2013; Merriam and Tisdell, 2015; Patton, 2014). The interview schedule for parents in this study contained open-ended questions (Appendix 6). The interview questions were influenced by the research objectives concerning the parents. According to Charmaz (2006) and Turner (2010), the use of open-ended interview questions enables participants to provide study-relevant information. The interview schedule was piloted to determine its suitability and participants' understanding (Patton, 2014).

Piloting an interview schedule also aids a novice researcher in gaining the confidence and experience necessary for future interviews. According to Merriam and Tisdell (2015), researchers frequently rely on the interview schedule during the preliminary phase of interviews. However, as the interviews progress, the researchers consult the guide to ensure that all questions have been addressed. An interviewer employs probes to elicit from an interviewee additional information useful to a study (Berg, 2009; Creswell and Plano Clark, 2011; Patton, 2014). When necessary, probes were used to elicit additional information from parents.

3.6.3.1 Study Sample Size

For quantitative studies, the largest possible sample sizes are preferable to increase the importance and generalisation of the conclusions derived from numerical data (Steinberg *et al.*, 2007), while qualitative studies usually have few participants as they seek in-depth information. Although there are general guidelines and rules of thumb, there are essentially no prescriptive quotas of the necessary number of participants in qualitative research.

Rather, researchers should utilise as many participants as required (saturation point) and as possible (relative to available resources and capabilities in the study context) in order to answer their research questions (Polit and Beck, 2021). General guidelines (rules of thumb) for sample sizes in qualitative research when studying relatively larger populations (i.e., health

service users, in contrast to the more clinician focused interviews with HCPs) are shown in Table 7.

Table 7: General suggestions on qualitative research sample sizes

Type	Suggested Sample Size	Source
Grounded theory	20-30	Creswell and Creswell (2017)
	3—50	Morse (1994)
Ethnography	30-50	Morse (1994)
Phenomenology	5-25	Creswell (2007)
	6	Morse (1994)
General qualitative research	15	Guest, Bunce and Johnson (2006)

In practice, signposting to the guidelines above and the number of participants used in similar studies (Steinberg *et al.*, 2007; Kelly *et al.*, 2016; Grandpierre *et al.*, 2017; Kasper *et al.*, 2017), the current researcher recruited fifteen participants (pregnant women and mothers with newborn), five fathers/soon-to-be fathers (however, men generally are difficult to be found at the prenatal and postnatal wards as they consider these activities to be strictly for women). According to Yaya *et al.* (2019), access to and utilisation of maternal services are positively correlated with father involvement. Despite evidence that male participation increases the utilisation of maternal and child services, few men participate in such programmes in the UPTH (there were a total of 20 participants in the studied context).

3.6.3.2 Inclusion and Exclusion Criteria

Table 8 shows the inclusion and exclusion criteria for parental service users.

Table 8: Inclusion and exclusion criteria for parents (service users)

Inclusion Criteria	Exclusion Criteria
• Nigerian citizen • Resident in Port Harcourt • Pregnant woman (18-45 years of age) registered for antenatal at UPTH or mothers with newborn (18-45 years), irrespective of first or second child, registered for inoculation program at UPTH (the immunisation programmes are carried out on particular days, this will aid in recruitment) • Fathers and soon-to-be fathers at the immunisation/antenatal clinic at UPTH	• Non-Nigerian • Non-resident in Port Harcourt • Women without pregnancy or parents without newborns • Men without pregnant partners or newborns • Women aged 45 years and above

3.6.3.3 Duration and Recording of Interviews

With the parents' permission, the interviews were audio-recorded, in order to have accurate transcripts for analysis (Rubin and Rubin, 2012). According to DiCicco-Bloom and Crabtree (2006), the duration of an interview can range from thirty minutes to several hours, depending on the interview schedule. Some authors assert that the duration of an interview cannot be predetermined due to the adaptable nature of qualitative research (Patton, 2014), whereas others have argued that the topics to be covered impact the timeframe (Morris, 2015). The duration of the interviews conducted in June 2022, ranged between 38 and 59 minutes. Individual semi-structured F2F interviews permitted participants to discuss NS for HL at their convenience and in a relaxed setting. This method of data collection was particularly useful because participants were able to express their opinions without feeling intimidated by the presence of others (Green and Thorogood, 2018).

3.6.4 HCP Interviews

The third objective of this study explored the views of key healthcare stakeholders (i.e., HCPs) to access to NS for HL including barriers and enablers to NS for HL.

As with the parent interviews, an interview schedule (Appendix 7) containing open-ended questions was developed based on previous research on NNHS (Creswell, 2013; Patton, 2014). The questions included in the interview schedule for HCPs were designed to achieve objective 1 in part and address objective 3 of the study. It was piloted to assess the participants' comprehension of the questions and modified as necessary (Patton, 2014), but no modifications were deemed necessary.

3.6.4.1 Study Sample Size

This research followed the example of previous qualitative descriptive studies using semi-structured interviews by Alameddine *et al.* (2017) and Hangulu and Akintola (2017), which explored the key HCP stakeholders' views on the barriers and challenges they perceived with regard to primary health care with relatively small samples. In-depth analysis was successful in identifying the causes of such issues and proposed actual way in which these were tackled.

This method of interview seeks to elicit the healthcare stakeholders' in-depth and genuine expression of their experiences and gave the interviewer the opportunity to encourage them to impart additional insights based on their own experience (Mwaka *et al.*, 2018). It also ascertained barriers based on their job description and experiences concerning existing strategies for NS for HL and the ways they considered effective (in response to objective 1) to improve these barriers in order to enhance NS for HL (Alameddine *et al.*, 2017).

In this study, the participants included doctors and nurses who are NGO coordinators, public health director, a member of Nigeria Medical Association (Rivers State Chapter). The current research also explored the views of two NGO coordinators, one public health director, one member of NMA, and one CNO (for a total of five participants). This great diversity of participants offered a comprehensive overview of NS for HL in Port Harcourt.

Consequently, five HCPs participated in semi-structured interviews to explore their perspectives on NNHS. Due to the hectic schedules of HCPs, conducting individual semi-structured interviews with one HCP at a time allowed them to freely and conveniently disclose their responses. It also reduced the likelihood that they would be persecuted by other senior staff. The healthcare stakeholders were recruited by purposive sampling technique (Palinkas *et al.*, 2013). In qualitative research method, purposive sampling technique is generally applied in order to select and identify "information-rich phenomena" (Patton, 2014) This means that, knowledgeable individuals or groups with experience in a particular area of interest are identified, selected and included in the research (Cresswell and Plano Clark, 2011). The recruitment process and data collection of this objective three took place in the hospital premises as the office of all the stakeholders recruited are located at the UPTH (the research site).

The chief medical director (CMD) was interested in the study, so he accompanied the researcher to a meeting with the participating physicians in the antenatal and paediatric departments. With the assistance of the CMD, the researcher informed five HCPs and who were willing to participate, the PIS was given to them and enough time to consider it. One of the five HCPs agreed to an interview on the same day after taking some hours to carefully

read and consider the PIS (Appendix 8). Four HCPs contacted the researcher by phone and arranged an interview location, date, and time.

The PIS (Appendix 8) and consent form (Appendix 9) were distributed to each participant. A verbal consent was first obtained, followed by a written agreement, as evidenced by the participants' signature on the consent form. Individual interviews were conducted with HCPs in their offices or other private rooms within the facility.

3.6.4.2 Inclusion and Exclusion Criteria

Table 9 shows the inclusion and exclusion criteria for HCP service providers.

Table 9: Inclusion and exclusion criteria for parents (service users)

Inclusion Criteria	Exclusion Criteria
• Nigerian citizen • Resident in Port Harcourt • Working at UPTH • Nurse, physician, or NGO coordinator • ≥ 3 years' experience in healthcare	• Non-Nigerian • Non-resident in Port Harcourt • Not working at UPTH • Not a nurse, physician, or NGO coordinator • < 3 years' experience

Source: Author

3.6.4.3 Duration and Recording of Interviews

Individual interviews with HCPs were conducted contingent on their availability and allowed for a more candid disclosure of their perspectives. Before conducting an interview, the researcher reminded HCPs that their responses would be kept confidential and that code numbers would be used to protect their anonymity (Patton, 2014). With the HCPs' approval, a digital audio recorder was activated. It was used to guarantee that the interviews were accurately recorded for transcription and the quality of the findings (Rubin and Rubin, 2012). At the conclusion of the interviews, the researcher allowed the HCPs to ask questions or provide feedback. They were thanked for participating in the study and assured that any information they provided would be kept confidential and used for research purposes only. The duration of the interviews conducted in June 2022 ranged from 30 to 60 minutes.

3.7 Data Analysis

This section explains the stages of the analytic approach used to generate the findings from the data collected in this study and justifies the selection of the method of analysis.

3.7.1 Thematic Analysis

3.7.1.1 Overview

Since there are no clear-cut guidelines on how to analyse qualitative data, qualitative researchers use a variety of analytic procedures for data analysis (Berg, 2009; Bryman, 2012). However, data analysis involves steps that are frequently interconnected. It involves reading about databases, organising data, coding and classifying themes, and representing and interpreting data (Creswell, 2013). Different elements, according to qualitative researchers, define the method of analysis employed in research. According to Patton (2014), the method of data analysis is frequently determined by the researcher's philosophical perspective. As previously stated, the philosophical perspective adopted in this study is interpretivism, an approach that permits the comprehension of people's experiences and perspectives (Fossey *et al.*, 2002; Green and Thorogood, 2018).

Thematic analysis is also utilised by interpretive phenomenological analysis and grounded theory (Braun and Clarke, 2019). However, Clarke and Braun (2013) argue that it is an analysis method. However, the lack of consistency and clarity between thematic analysis and other analytic processes led to the development of additional methods, such as thematic content analysis (Green and Thorogood, 2018). Vaistoradi, Turunen and Bondas (2013) suggest that thematic and content analysis share some similarities. Similarities exist in terms of organising, searching, and identifying patterns and themes within the data; however, there is a significant distinction between the two approaches. Quantification of data is the primary distinction between these methods of analysis (Vaismoradi, Turunen and Bonda, 2013).

This approach was unsuitable for the analysis in the present study because content analysis determines the significance of the data based on the frequency of occurrence of various themes and categories. In health and social care research, framework analysis is a type of content analysis that summarises and organises data within a thematic structure (Green and Thorogood, 2018). Although it shares some similarities with thematic analysis, there are differences in the stages of analysis. In the final stage of framework analysis, the distinction between like content analysis and "what's going on" is recognised, as like content analysis is concerned with the content of the financial statements (Green and Thorogood, 2018). The preceding discussion explains thematic analysis and why it was utilised in the present study.

3.7.1.2 Reflexive Thematic Analysis

According to Braun and Clarke (2019), Reflexive thematic analysis takes into account approaches that are fully rooted in the values of the qualitative paradigm. These values then guide research practise. Thematic analysis is fundamental to qualitative research (Braun and

Clarke, 2019) and serves as the basis for acquiring the fundamental skills necessary for qualitative analysis. The purpose of thematic analysis is to search for, identify, and document the themes (patterns) that emerge to describe a phenomenon (Patton, 2014; Braun and Clarke, 2019; Green and Thorogood, 2018).

This method of analysis is theoretically flexible, because it permits the search for and identification of patterns without necessarily subscribing to or adhering to a particular framework (Braun and Clarke, 2019). This implies that thematic analysis can be utilised within a variety of theoretical frameworks, such as constructivism and realism/essentialism, albeit with varying foci and results. Using a thematic analysis from a constructionist perspective, for instance, would emphasise understanding the structural conditions and sociocultural contexts that influence the accounts of individuals' experiences. In contrast, the realist perspective theorises meaning and experiences in an uncomplicated manner (Braun and Clarke, 2019). The theoretical detachment of thematic analysis permits its use in research without the "confusing" knowledge of qualitative approaches (Clarke and Braun, 2013).

Thematic analysis permits the use of both deductive and inductive methods. This approach to thematic analysis focuses on the researcher's analytical interest; consequently, it is analyst-driven and does not present the breadth of the entire data set, but rather focuses on specific aspects. In the inductive method, the themes that emerge have a strong relationship with the data (Patton, 2014), and if the data is for research purposes, they may align with the research questions (Braun and Clarke, 2019). Others have reported that the analytic method can be used when there is no prior research on the phenomenon of interest and themes emerge directly from the data (Bryman, 2012). Consequently, inductive analysis entails coding the data for themes without attempting to place it within preconceived analytic notions. Consequently, it is frequently data-driven (Braun and Clarke, 2019).

3.7.1.3 Justification for Using Reflexive Thematic Analysis

In qualitative research, data analysis is examining the relationship between classifications and data themes with the goal of better understanding the phenomenon under examination (Pope, Ziebland and Mays, 2000; Joffe and Yardley, 2004; Joffe, 2012; Hilal and Alabri, 2013; Braun and Clarke, 2019; Braun and Clarke, 2019). Thematic analysis was used to analyse the qualitative data in this study, according to the widely used methodology described by Braun and Clarke (2006, 2014), which has been successfully deployed by numerous qualitative studies on NS for HL (Vos, Lagasse and Levêque, 2014; Graham *et al.*, 2019; Mumtaz and Saqulain, 2020; Seguya *et al.*, 2021). This method aligns with the interpretivist philosophical approach by identifying themes based on participant views/perceptions and experiences.

According to Braun and Clarke (2019), thematic analysis is a method of data analysis that establishes the patterns or themes in qualitative research. Braun and Clarke (2019) further argued that thematic analysis presents essential skills for conducting qualitative study and can be implemented across varieties of research questions (Nowell *et al.*, 2017). Though this technique is a poorly branded and rarely recognised procedure, yet it is broadly adopted in qualitative analytical method (Buetow, 2010). Braun and Clarke (2019) also acknowledged that they did not expect their original study (Braun and Clarke, 2006) to have such a massive influence; it is now one of the most cited academic works in the world. Therefore, a well adopted thematic analysis can serve as a translator to researcher and yield reliable findings (Boyatzis, 1998).

This study employed Braun and Clarke's (2019) thematic analysis method because it does not adhere to a particular qualitative methodology and theoretical perspective. The method of analysis is applicable within the realist research paradigms, making it appropriate for the theoretical framework utilised in this study. It is also applicable to a variety of research questions that seek to comprehend individuals' experiences and constructions of a social phenomenon (Braun and Clarke, 2019). Since the purpose of this study was to investigate the attitudes and perspectives of parents and HCPs regarding NNHS, this method of analysis was appropriate.

3.7.1.4 Phases of Thematic Analysis

This study adopted Braun and Clarke's (2006) six-step procedure for thematic analysis. These phases do not appear to be systematic but rather flexible, and certain steps are applicable to other qualitative analysis methods. The stages include: 1) becoming familiar with the data, 2) generating initial codes, 3) searching for themes, 4) evaluating themes, 5) defining and naming themes, and 6) producing the report, as adumbrated described below.

3.7.1.4.1 Familiarisation with Data

This phase begins with the data's transcription into written form. Initially, the researcher used Microsoft Word for transcription, but as a result of the Nigerian accent, the correct words were not captured and identified. Therefore, the researcher repeatedly listened to the audio-recorded interviews and manually transcribed all into text (Braun and Clarke, 2019). Data familiarisation is a crucial step in thematic analysis. It allows the researcher to immerse themselves in the data by reading it multiple times. Typically, the transcription process is tedious and time-consuming. It is one of the drawbacks of qualitative research that qualitative analysis involves a large number of transcripts, which makes the process tedious (Patton, 2014). According to Bird (2005), this phase of the analysis may seem time-consuming, but it

is crucial to the interpretive methodology. To familiarise himself with the data, the researcher continuously listened to the audio recordings, transcribed, and read the transcripts of the semi-structured interviews. While repeated data reading can be time-consuming, Braun and Clarke (2019) emphasise that this step is the foundation of the entire analytical process. Additionally, it is necessary to begin highlighting ideas that will be useful in the subsequent phase.

3.7.1.4.2 Development of Initial Codes

After reading the data to familiarise oneself with it and generating new ideas based on its content, initial coding will commence. Different data characteristics of interest to the researcher are represented by codes. Coding entails the creation of labels for significant data characteristics pertinent to the research questions. It is an essential analytic step that can use either an inductive or a deductive strategy (Patton, 2014).

As previously stated, the deductive method is theory-driven, while the inductive method is data-driven (Braun and Clarke, 2019). The data can be coded manually or with the aid of a computer programme. The analyst peruses the transcripts methodically, paying close attention to every data point. The researcher then identifies any relevant aspects to the research question that may lead to the formation of patterns within the data. For the present study's thematic data analysis, version 12 of NVivo was utilised. NVivo is a software package utilised for qualitative data analysis. Although the software does not precisely analyse the data, it aids in organising, managing, and enhancing rigour throughout the process (Patton, 2014).

In this study, the research objectives dictated the generation of the initial codes from the accounts of parents and HCPs. Using an inductive methodology, relevant information from the transcripts that was pertinent to the research objectives will be used to generate the codes. The purpose of conducting the initial coding in this manner will be to prevent the introduction of any preconceived notions from existing theories or prior literature, and to ensure the coding of all relevant information. At this stage, it is important to note that the researcher will code the data for as many possible patterns and themes as are available. Additionally, codes can fit into multiple potential patterns and themes (Braun and Clarke, 2019).

3.7.1.4.3 Finding Themes

At this stage, various initial codes from the data will be compiled. The objective of this stage is to compile all initial codes that appear to be relevant into a potential theme and sort these codes into various themes as patterns emerge. The codes will be examined to determine whether and how they can be combined to create a central theme (Braun and Clarke, 2019). In this study, the researcher will examine each transcript's initial codes for two reasons:

- To determine whether the initial codes could be compiled into a central theme. The preliminary codes will be categorised based on their relationship to the research objectives.
- To determine which of the codes did not align with the others to form a cohesive theme.

At this point, the researcher will begin to establish any connections between the main themes and subthemes. Braun and Clarke (2019) recommend writing down the names of the codes, creating a mind map, or using tables to organise them into themes. The emergent thematic framework arising from the thematic analysis of data in this research is expounded in Chapter 4, based on using NVivo (v. 12) to organise codes. Some of the initial codes were compiled into themes, while others were developed into subthemes.

3.7.1.4.4 Reviewing Themes

In this phase, the themes and subthemes identified in the previous stage are reevaluated, as some of them may not pass as such. For instance, there may be insufficient data to support the themes, data irregularities, or the merging of two themes into one. It is essential that the meaning of the data used to support the themes be consistent and distinct (Braun and Clarke, 2019). There are two levels involved in this phase: reviewing and refining the themes. Each theme's compiled excerpts are read to determine their consistency at the first level (Braun and Clarke, 2019).

In this study, the researcher examined the themes to determine if they matched the coded extracts. If necessary, extracts were then re-examined to form new themes if they did not fit well with the themes. After determining the coherence between the coded excerpts and the themes, the second level commenced, which essentially reiterates the previous process. The entire data set was reread, to determine if the themes correspond with the extracted data, and additional information that was missed during initial coding was coded. The themes from the transcripts of both parents and HCPs were re-examined and recoded, to identify any previously omitted pertinent information (Braun and Clarke, 2019). At this stage, a thematic map was generated.

3.7.1.4.5 Identifying and Defining Themes

This phase entails identifying the significance of each theme and the data characteristics that each represents. According to Braun and Clarke (2019), the description of the themes should include their meaning and not be a paraphrase of the excerpts. It is essential to consider how the themes align with the research objectives and to avoid overlap where unnecessary. The main and subthemes identified and revealed the principal themes' hierarchy and structure.

3.7.1.4.6 Developing the Report

In this final phase of the thematic analysis, the report is written after the theme has been fully identified. Whether for academic purposes or publication, a comprehensive report on the findings is composed. The report contains concise, logical, and coherent data extracts that support all of the themes. Braun and Clarke (2019) recommend including data excerpts that illustrate the story being told based on the research question. In the results chapters of this study, detailed explanations of each theme's significance and supporting data extracts will be provided.

The themes that emerged from the semi-structured interviews with parents and HCPs are presented in Chapter 4.

3.7.2 Methodological Rigour Using the Lincoln and Guba (1985) Framework

3.7.2.1 Overview

When assessing the quality of quantitative studies, the terms “validity” and “reliability,” which have their origins in the natural sciences, are frequently employed. As a result of the epistemological assumptions underlying qualitative research, there are controversies surrounding the application of criteria to determine the quality of qualitative studies (Bryman, 2012; Ritchie *et al.*, 2013). For instance, for some, assessing validity connotes measurement, which is not supported by the majority of traditional qualitative researchers. Guba and Lincoln (1994) suggest that qualitative studies should be evaluated using criteria distinct from quantitative research standards. The premise of their argument was that using the terms reliability and validity in qualitative research would imply accepting the existence of a single reality. Therefore, they proposed two criteria: credibility and originality.

Four criteria were adumbrated by Lincoln and Guba (1985) by which to assay qualitative research trustworthiness: credibility, dependability, confirmability, and transferability. These were developed as counterparts to the internal validity criteria of objectivity, reliability, and external validity. The pioneering model of Lincoln and Guba set the scene for subsequent debates on methodological rigor. A revised version reflected new conceptual developments, adding the extra naturalistic criterion of authenticity (Guba and Lincoln, 1994). This framework was applied to ascertain the trustworthiness of the research.

Trustworthiness is comprised of credibility (validity), transferability (external validity), dependability (reliability), and confirmability, whereas authenticity considers the research's broader implications (Bryman, 2012). Other researchers propose comparable criteria for enhancing the calibre of qualitative research, including credibility (validity), dependability,

transferability (generalisability), and reflexivity (Denscombe, 2010; Bryman and Bell, 2013; Korstjens and Moser, 2018). This suggests that some qualitative researchers utilise the rigour standards (reliability and validity) associated with the quantitative paradigm, whereas others prefer concepts such as dependability and credibility that are closely associated with qualitative research (Samure and Given, 2008). Several criteria for evaluating the rigour and quality of qualitative research were used in this study (Polit and Beck, 2021), as discussed in greater detail below.

3.7.2.2 Credibility

In qualitative research, validity, also referred to as credibility, is an interpretation of the phenomenon's "truth" (Green and Thorogood, 2018). It is the appropriateness of the instruments used, the collected process and data (Leung, 2015). In other words, it involves ensuring that the data collection procedures are appropriate and accurate.

Denscombe (2010) emphasises that while these steps do not guarantee the veracity of the collected data, they provide evidence of evaluating the data in accordance with standard practise. During analysis, qualitative research credibility can be maintained through triangulation of researchers, sources, and respondent validation (Denscombe, 2010; Tracy, 2010).

Before beginning data collection, the researcher established F2F contact with the participants to enhance the credibility of the study's findings. This provided an opportunity to establish rapport with the study participants, as evidenced by their willingness to participate freely. After the researcher had identified the themes that emerged from the data, the supervising team conducted a cross-check to ensure that the supporting excerpts reflected the themes, and vice-versa.

3.7.2.3 Dependability

Dependability in qualitative research corresponds to reliability in quantitative studies and refers to the likelihood that other researchers will obtain very similar results when applying the methods of inquiry used in a study (Yardley, 2000; Leung, 2015). Since qualitative researchers are frequently concerned with an individual's experience and meaning, they acknowledge the significance of the context in which an individual creates meaning (Yardley, 2000). Furthermore, some authors argue that dependability is compatible with quantitative research due to their realist perspective on a single reality (Seale, 1999). This may suggest that dependability does not match well with qualitative research that recognises multiple realities (Braun and Clarke, 2019).

When dependability is viewed from the perspective of the reliability of the research methods – data collection and analysis (McLeod, 2001) – its utility in qualitative research becomes apparent. It can be difficult to describe dependability in qualitative research with varying epistemological perspectives (Leung, 2015). From an interpretivist standpoint, it involves a researcher's ability to demonstrate that the research procedure can be repeated (Mason, 2002; Merriam, 2009). To achieve dependability, experts recommend reflecting on and documenting all phases of the research process, including participant recruitment, data collection, and analysis (Guba and Lincoln, 1994; Ritchie *et al.*, 2013; Bryman, 2012). In the present study, a detailed description of the research methodology is expounded in the current chapter. This description includes processes such as participant eligibility criteria, sampling techniques, and data collection and analysis procedures.

3.7.2.4 Transferability

Transferability is the extent to which the findings of a qualitative study are applicable to other participants and contexts with similar characteristics (Lincoln and Guba, 1985). Some authors suggest, to ensure transferability in qualitative research, that the researcher provide a detailed description of the participants, study setting, and research methodology (Lincoln and Guba, 1985; Sim and Sharp, 1998). This provides a basis for contemplating the possibility of transferring the findings to similar environments. Earlier in this chapter, a description of the study's context, including the setting, participants, and data collection methods, is provided.

In addition, qualitative research frequently involves an in-depth examination of a small group or individuals with similar characteristics, as opposed to the vast majority of quantitative studies. The findings frequently emphasise the context-specificity of the studied phenomenon (Bryman, 2012). Due to the small sample size, the applicability of this study's findings to similar settings in Nigeria is questionable if additional research is not conducted to dispute or confirm the findings (Ritchie *et al.*, 2013).

3.7.3 Triangulation of Data

To ensure the trustworthiness, and quality of the study findings, data obtained from objective two was triangulated with data acquired for objective three (Seale, 1999; Tracy, 2010). Triangulation is a strategy for testing and validating information by combining data from multiple sources to look for patterns in research data (O'Donoghue and Punch, 2003; Carter *et al.*, 2014). This also aids in expanding a study's findings (Turner and Turner, 2009). Furthermore, according to Flick (2004), the goal of triangulating study data is to create a rich, detailed, comprehensive, and balanced picture of the topic under consideration by investigating it from multiple perspectives. As a result, triangulation was used in this study to

collect data using various sampling tactics, such as getting data from various study participants in various contexts and at various times (Roulston, 2018).

With a focus on triangulation, the idea of insuring research validity in qualitative investigations is gaining traction (Roulston, 2018). There have been some reported effective qualitative research projects that have triangulated their findings. For example, Kulkarni and Gathoo (2017) employed space and person triangulation to determine data trustworthiness in qualitative study using conversational analysis at five locations in Mumbai to get the views of stakeholders, parents and special educators on children with HL. Mwaka *et al.* (2018) conducted a study in Uganda to investigate the perceptions and attitudes of medical students and key stakeholders (such as lecturers and TCM practitioners) toward the integration of TCM into the medical school curriculum.

3.8 Reflexivity

3.8.1 Overview

Reflexivity is a concept with multiple meanings in the social sciences and is frequently employed in qualitative research due to the participant-researcher relationship (Lynch, 2000; Reeves, Kuper and Hodges, 2008; Kvale and Brinkmann, 2009; Denscombe, 2010; Bryman, 2012). Being reflexive in qualitative research enables a researcher to self-examine and recognise any personal values, influences, or biases that may impact the research (Mauthner and Doucet, 2003; Gerrish and Lacey, 2006; Bryman, 2012; Green and Thorogood, 2018). In other words, reflexivity enhances the quality of the study by explicating how a researcher's experience, perspective, and preconceptions may impact the research process, including data analysis and interpretation of findings (Primeau, 2003; Kvale and Brinkmann, 2009).

In addition, according to Guillemin and Gillam (2004), there is a close relationship between reflexivity and ethical practises in the research field. Consequently, qualitative researchers must reflect on their roles in data collection, analysis, and interpretation (Mauthner and Doucet, 2003; Primeau, 2003; Edge, 2011). Lynch (2000) emphasised the various forms of reflexivity with varying meanings and how their application varies according to philosophical perspectives and schools of thought. Substantive, mechanical, methodological, and interpretive reflexivity are some of the forms. Methodological reflexivity, for instance, is frequently used in qualitative research and includes philosophical self-reflection, methodological self-consciousness, and methodological self-criticism (Lynch, 2000).

Consequently, methodological reflexivity necessitates a critical examination of one's personal assumptions and beliefs, as well as one's relationship with the study participants. The

following reflective statement describes the processes that may have influenced the research methodology and findings of this study: situating the study, managing “self,” gaining access to the participants, and interpreting the results (Primeau, 2003). There is an additional “Reflection” on this research as a whole in section 6.8.

3.8.2 Situating the Research

This study’s research question was derived from reading previous studies and reviewing the relevant literature. The present study’s literature review may have introduced preconceived theories and concepts into the data. In addition, the majority of the published research in Nigeria is quantitative, while only a small number of qualitative studies have been reported. This is likely because the local cultural milieu discourages people from sharing their views and opinions freely. Heath and Cowley (2004) argue that when a researcher has prior knowledge of the research topic, it can be challenging to completely disregard this information.

However, Corbin and Strauss (2008) acknowledge that such information can facilitate the comprehension of participant accounts. Literature and experience have provided the researcher with theoretical knowledge of HI and NS for HL. Also, adopting an interpretive qualitative perspective shaped the research methods of this study, because the perspective acknowledges the existence of multiple realities and focuses on comprehending the attitudes and perceptions of research participants toward NNHS (Fossey *et al.*, 2002; Weaver and Olson, 2006; Green and Thorogood, 2018). Participants discussed their knowledge and perspectives of NNHS. However, being reflexive allowed the researcher to disregard any preconceived notions that may have been introduced by the literature review. This allowed themes to emerge directly from the collected data, enabling a comprehension of NNHS from the perspectives of parents and HCPs.

3.8.3 Gaining Access

Access to parents registered for their routine programme at the antenatal and postnatal ward at UPTH, as well as HCPs, was necessary for the completion of this study. Initially, the researcher anticipated facing the challenge of recruiting participants willing to participate in the study and share their perceptions and understanding of NNHS. However, the researcher’s “insider” status (being Nigerian, a native of Port Harcourt, and previously employed at the UPTH) facilitated negotiation access but did not allow him to circumvent the process. In addition, all participants volunteered for the study, which allowed for an understanding of their perspectives on NNHS in Port Harcourt.

The researcher also maintained a journal and field notes throughout the duration of this study and data collection. Bryman (2012) defines field notes as exhaustive summaries of behaviour

and incidents along with the researcher's initial reflections on them. From the field notes and diary kept for this study, the researcher was able to reflect on his personal thoughts regarding events and experiences that occurred during data collection in the field, as well as processes that presented obstacles and "breakthroughs" (Alder and Alder, 2009).

3.8.4 Managing "Self"

Another issue central to this reflexive account is the "insider-outsider" perspective of the researcher (Watts, 2006); however, researchers' epistemological stance typically determines their status (Griffith, 1998). In qualitative research, the "insider-outsider" position refers to the extent to which researchers are positioned either outside or within the group being studied due to their shared "lived experiences" or membership in that population (Dwyer and Buckle, 2009; Gair, 2017). An "insider" is a researcher who shares similar characteristics with the study group, such as gender, ethnicity, experiences, or roles, whereas a "outsider" does not belong to that population (Kanuha, 2000; Asselin, 2003; Gair, 2017).

In the literature, there are discussions about the "insider" and "outsider" status of the researcher in relation to the research process (Kanuha, 2000; Asselin, 2003). Some scholars have argued that the researcher's "insider" status is advantageous in research processes such as developing study questions, gaining access to participants, and analysing data (Griffith, 1998; Kanuha, 2000; Gair, 2017). However, it also presents obstacles, such as the participants' expectations of the researcher (Kanuha, 2000). As with the "insider" viewpoint, the "outsider" status is not without controversy; authors have presented arguments for and against it (Bridges, 2001; LaSala, 2003; Hellawell, 2006).

In addition, De Cruz and Jones (2004) contend that a researcher may be either or, and sometimes both. They recognised that while the "outsider" status may make gaining access difficult, the "insider" status has in the recent past been used to circumvent it. Whether researchers are "insiders," "outsiders," or both, it is essential and an ongoing aspect of the research to document their position (Dwyer and Buckle, 2009). Having an understanding of the researcher's position enables reflective practises that ensure the accuracy of the findings (Deggs and Hernandez, 2018).

3.8.5 The Position of the Researcher

This study benefited from the dual position of the researcher as "insider" and "outsider." On the one hand, the researcher has Nigerian nationality and is familiar with the country's healthcare system. Possessing this status may have increased the likelihood of acceptance from participants and staff at UPTH. The researcher was able to communicate with UPTH personnel and receive assistance from them, particularly during data collection in the field. In

addition, being a native of Port Harcourt provided the researcher with “insider” status and an understanding of the state’s culture. Deggs and Hernandez (2018) emphasise how crucial it is for researchers to immerse themselves in qualitative research settings in order to comprehend the cultural norms’ dynamics. In Nigeria, individuals of a particular ethnic group are frequently distinguished by the language they speak. Greeting people in their native tongue fosters a sense of identity and facilitates communication.

Port Harcourt is a multicultural city with a variety of languages; however, English or Pidgin English is the *lingua franca*. In certain instances, the researcher was required to greet participants in their local language, if known, English, or “pidgin English” in order to break down any initial barriers and increase their reception and willingness to interact with the researcher. Moreover, during recruitment, for instance, the researcher was cognisant of the impact that his status as a researcher could have on how the participants viewed him, and he made it clear that accepting to participate or not will not affect their care, and in the case of HCPs, it will not affect their professional relationships and there will be no conflict of interest. Keeping this in mind, the researcher minimised his status as a researcher and eliminated any display of “power” to foster a productive environment.

The researcher also possessed an “outsider” perspective. Not being a current member of UPTH’s staff is another factor that requires reflection. The researcher anticipated that parents’ willingness to participate would be hindered if the researcher is not a current UPTH employee. However, this did not hinder the progress of the study, as a greater number of parents and HCPs expressed interest in participating. All participants freely expressed their perceptions and comprehension of NNHS.

The researcher entered the study with prior knowledge and experience related to HI and NS for HL, derived from multiple sources. This included professional experience as the president of a fully registered NGOs supporting persons with HI, as well as extensive engagement with the academic literature on childhood HL and screening programmes. In addition, the researcher had been exposed to informal accounts and second-hand narratives from residents of Port Harcourt, which reflected community-level experiences, concerns, and assumptions about HL. These experiences provided valuable contextual understanding of the research setting but also had the potential to shape preconceptions about the phenomenon under study.

Despite this background knowledge, the researcher approached the study with a clear commitment to privileging participants’ voices and perspectives. It was considered particularly important to hear, in their own words, the first-hand accounts of parents and HCPs regarding

NNHS, rather than relying on assumptions informed by prior experience or indirect narratives. The interviews were therefore conducted with an emphasis on openness, reflexivity, and active listening, allowing participants to articulate their views without being guided or constrained by the researcher's expectations.

To support reflexivity and enhance methodological rigour, the researcher maintained detailed field notes throughout the data collection process. These field notes were completed immediately after each interview session and included descriptive records of events, non-verbal behaviours, contextual factors, and notable interactions observed during the interviews. In addition, the field notes incorporated a reflective journal in which the researcher documented personal thoughts, emotional responses, and emerging interpretations. This reflexive practice enabled the researcher to identify and acknowledge personal assumptions, potential biases, and emotional reactions as they arose.

Prior to commencing formal data analysis, the field notes and reflective journal were revisited and critically examined. This process allowed the researcher to explicitly recognise the subjective elements inherent in qualitative inquiry and to bracket, as far as possible, pre-existing views when engaging with the interview data. By acknowledging and managing subjectivity in this way, the researcher sought to enhance the transparency, credibility, and trustworthiness of the analytical process, ensuring that the findings were grounded primarily in participants' accounts rather than in the researcher's prior experiences or expectations.

3.9 Ethical Considerations

3.9.1 Overview

This section presents the ethical considerations pertaining to this study. Numerous aspects of academic studies entail ethical issues, particularly when involving human research participants (Schwandt, 1999; DiCicco-Bloom Crabtree, 2006; Bryman, 2012; Austin and Sutton, 2014). Academically, ethical issues pertain to study designs' robustness, transparency, and honesty, while general ethical and legal considerations govern participants' rights to confidentiality (and anonymity if relevant), privacy, data protection, security, right to withdraw, informed consent, and potential sensitivity to the research process (Olusanya, Luxon and Wirz, 2005).

During data collection, parents and HCPs were interviewed simultaneously. Permission to conduct interviews was granted by the UPTH Research Ethics Committee (Appendix 10), the head of the paediatrics department, and the CMD of UPTH for both parents and HCPs. Therefore, no separate permission was sought to gain access to the medical facilities for

interviews with the medical staff. The gatekeeper at UPTH assigned administrative personnel who guided the researcher to the offices of potential participants and assisted with the recruitment of HCPs.

Ethics application for data collection was submitted to the Brunel Research Ethics Committee. Following a review of the study's application, an ethics approval (REC Reference No. 31757-MHR-Apr/2022-39214-2, 23rd May 2022) (Appendix 11) was obtained. In addition, a similar application for approval from UPTH was made in Nigeria (UPTH/ADM/90/S. II/VOL. XI/1277, 25th November 2021) (Appendix 10) and approved.

3.9.2 Informed Consent

In research, informed consent is the principle that enables researchers to provide adequate information to research participants. It frequently includes the option to participate or decline participation without coercion (Polit and Beck, 2021; Denzin and Lincoln, 2017). Participants should be permitted to participate voluntarily after understanding the research's purpose (Green and Thorogood, 2018; Lincoln, 2009; Creswell, 2012). All participants were informed verbally of the purpose of the current study and given a consent form and information sheet. The PIS explained the purpose of the study, the data collection procedure, and the participant's right to accept or decline participation voluntarily. They were given time to read the PIS and decide whether or not they wished to participate in the study. All participants had the option to withdraw from the study at any time if they so desired (Berg, 2009). The consent form was used to determine whether the participant had received and read the PIS, had the opportunity to ask questions, understood their right to accept or decline participation, and consented to an interview. In addition, they were asked to confirm that their names would not be used in the study and to be audio recorded. All participants signed the form voluntarily to indicate their consent.

3.9.3 Confidentiality, Anonymity, and Privacy

Anonymity and confidentiality are crucial ethical concerns when conducting research to protect the information and identities of participants (Green and Thorogood, 2018; Denzin and Lincoln, 2017). In the consultation offices, interviews were conducted with parents and HCPs. The interviews with HCPs took place in their offices or in a room at the health facilities. This study maintained confidentiality in a variety of ways. Participants were identified using code numbers throughout data collection, and will be identified as such throughout data analysis, presentation, and publication.

The data was transcribed in a private room with headphones to prevent others from overhearing the audio recordings. During transcription, any information that could identify a

participant was removed. In the results chapters, examples of how code numbers were used to identify participants will be provided. Any sociodemographic information provided by the participants was for research purposes. All participants were informed that any socio-demographic information they provided would be used for data analysis and the presentation of the results. The collected information was not shared with any other individuals or organisations besides the supervising team (Lincoln, 2009; Creswell, 2012). This ensures that the information is respected and kept private in accordance with data protection regulations (Polit and Beck, 2021). Thus, confidentiality and anonymity were maintained at every stage of the study.

3.9.4 Safeguarding

As a result of the sensitivity of a research topic, it is possible for participants to become distressed, anxious, or even agitated when expressing their opinions. Due to the sensitive nature of the research, the researcher anticipated that participants might experience emotional distress. Through contact with the gatekeepers, counsellors at the health facilities were readily available to assist participants who became distressed or uncomfortable during the interview, and a distress protocol (Appendix 12) was also developed (Sanjari *et al.*, 2014). Appendix 13 shows the risk management protocol used.

During data collection with the parents (semi-structured interviews), the researcher kept an eye out for signs of emotional distress, such as prolonged pauses or crying. If participants displayed distress, the researcher was prepared to pause the conversation and ask if they wished to discontinue or consult a counsellor. In instances where participants felt compelled to continue or discontinue after the break, the researcher would have complied with their wishes. In addition, if a participant requested withdrawal, the researcher was prepared to inform them that they could seek support by speaking with a counsellor at the health centre.

However, none of the participants in this study exhibited signs of emotional distress, none requested to discontinue, and they shared their perceptions voluntarily.

3.9.5 Storage of Data and Analysis

All collected data were transferred to a laptop protected by a password. The digital audio recorder signed consent forms, and socio-demographic information sheets were stored in a safe that was only accessible to the researcher (Patton, 2014). No false information was given to participants during data collection, and data were stored on a password-protected laptop and in a secure safe accessible only to the researcher, in accordance with GDPR regulations. Only the researcher who transcribed the data and the supervisors had access to the

transcripts and will report the results based on the research objectives (Lincoln, 2009). In addition, no false information will be included in the results and discussion chapters.

3.9.6 Risk–Benefit Analysis

This analysis or assessment assays the degree to which likely beneficial outcomes of a study are commensurate with the associated drawbacks, including personal emotional, logistical, and financial considerations (Berg and Lune, 2001). On the most rudimentary level, the underlying ethical precept of analysing risk is to consider that the likely academic and socio-cultural advantages of the research or the intrinsic social and ethical value of the ends for which the study is conducted should not result in personal harm to participants (Haverkamp, 2005).

3.9.7 Participant Protection from Harm

Studies are viewed as sensitive if participant identification could foreseeably cause embarrassment or stigma and cause other harm (e.g., emotional discomfort) in the process of disseminating such data (Draucker *et al.*, 2009; Melville, 2016). Studies of HL are potentially sources of emotional discomfort, particularly concerning parents/primary caregivers (Graham *et al.*, 2019). HL itself is widely linked to isolation, stigma and discrimination (Olusanya, 2006; Neuman *et al.*, 2019), thus it could be foreseen from the outset that interviewing participants especially mothers with newborn and pregnant women could be problematic and could raise awareness of hitherto suppressed or unforeseen issues relating to HL for participants.

Consequently, the researcher undertook sensitivity training (online, via Futurelearn) prior to conducting data collection, to learn techniques by which to make sure questions are appropriate for participants, avoiding undue pressure or stress for them (Decker *et al.*, 2011). To that end, a pilot interview was conducted to make sure the instrument is appropriate for the target population in terms of practical and emotional issues as well as ensuring it covers the necessary areas of academic interest (Asuzu *et al.*, 2015). Naturally, participant reactions and paralinguistic features will be observed during the interview process itself, and a distress protocol will be prepared *a priori* to effectively avoid stressful situations and steer the interview toward more germane topics, if participants appear distressed (Draucker *et al.*, 2009; Haigh and Witham, 2015). Necessary actions in this regard also included taking a break, pausing and suspending or terminating the interview, and providing information on available mental health services and organisations that participants may be interested to contact to help manage their distress.

At the end of each interview, participants were directly asked for feedback about the process, and if they experienced any distress. If any report this, contact information will be provided for

supporting services. The interviews were held in a private and safe environment amenable to participants, which respects their rights in addition to facilitating a more disclosure of data during the interviews (if participants feel relaxed, safe and confident, they tend to contribute richer data to qualitative investigations) (Bryman, 2012; Austin and Sutton, 2014). However, no participant showed any emotional discomfort during the entire process of data collection. The following section provides further application of other ethical issues related to the protection of the interview participants, which is part of the procedural, situational, relational, and exiting ethics (Tracy, 2010).

3.9.8 Ethical Dimensions

3.9.8.1 Procedural

Procedural or categorical ethics refers to ethical behaviours that are mandated by bigger organisations, governing bodies, or institutions as generally acceptable. Procedural ethics emphasises the importance of precision and the avoidance of forgery, omissions, and fraud (Tracy, 2010). For example, as a matter of procedural ethics, the researcher ensured that the participant is aware of the research's purpose and recognise that participation is voluntary. Before consenting, interview participants were given enough space and time to deliberate on the study to ensure they are completely informed about all aspects of it (Tod, 2010).

Additionally, the researcher secured the interviewees from undue exposure by storing all participants' personal information in a locked drawer and on a password-protected laptop. All interviewees were assured of their confidentiality. The interview transcripts were anonymised using pseudonyms; also, the participants' specific ages were not provided. Following transcription, audio recordings of participant interviews were stored on an encrypted laptop, and were removed from the Dictaphone. Only the researcher listened to the participant's interview audio recordings.

After the interviews, participants were given the option to ask any additional questions, and were also given the researcher's university email address and that of the supervisors in case they desired further information. Additionally, interviewees were asked if they wished to receive a summary of the findings. Individuals who requested this material received a summary of the study's objectives, major findings, and implications.

Also, all interview participants were reminded that they had the ability to withdraw from the study prior to or during the interview. If a participant had made this request, their interview data would have been destroyed and excluded from the research; in actuality, no participants chose to withdraw. As data was anonymised during the transcription process, participants were unable to withdraw after the completion of data analysis.

Studies relating to HL are sometimes considered as sensitive due to its link with psychological issues such as stigma, respondents may experience emotional distress during the interview. Thus, in order to minimise participants' emotional distress, the interview questions were meticulously drafted and reviewed by the supervisory team (Draucker *et al.*, 2009).

For this study, the researcher developed an interview distress protocol, which was implemented. Appendix 12 explains interview distress protocols, including questions to ask if the subject exhibits signs of emotional distress, as well as the right course of action to take. Possible actions include taking breaks during the interview session, terminating the interview if necessary, and providing participants with information on relevant organisations and health services they can contact for support, as well as debriefing participants at the conclusion of the interview session to ascertain whether they were emotionally distressed and to provide information on available social or psychological services. During the interview, no participant displayed emotional distress. The interviews were performed in a secure and private setting, which encouraged participants to participate and minimised any potential distress associated with the interview.

3.9.8.2 Situational

Situational ethics examines the ethical actions that emerge from the study situation (Tracy, 2010). Situational ethics recognises that each circumstance is unique and that the researcher's ethical actions should be constantly reflected on and questioned. As a form of situational ethics, the researcher will make ethical decisions based on the specifics of the interview environment; if the interview was in a public area, the researcher made provision for a more private section (e.g., an office), in order to create a more private mood within that public realm. Additionally, the researcher's emotions were managed during the interview by maintaining a neutral mood in order to avoid interfering with the interview's flow and disrupting the discourse.

3.9.8.3 Relational

Relational ethics entails an ethical self-awareness on the part of the researcher, in which they consider their actions, character, and the impact on others (Tracy, 2010). As a form of relational ethics, the researcher promises to share the findings with the participants, so that they may not only participate in the research but also return to the "scene" and discuss the discoveries. A copy of the completed research will also be submitted to UPTH. Another example of relational ethics in action is the management of power dynamics during the interview (Reid *et al.*, 2018).

This was accomplished by creating a relaxed environment that allowed the interview participant to answer the questions at their own pace and in the order they feel comfortable, without fear of judgement or insistent questions. The researcher also applied this by interviewing couples individually and privately. Additionally, a transparent approach was used throughout the study process, in order to foster mutual trust and respect between the researcher and interview subjects.

All interview participants provided informed consent (as per the PIS) to be interviewed, as well as permission for the interview to be audio recorded. The PIS addressed concerns about confidentiality, data storage and protection, and the right of withdrawal. At the start of each interview, time was spent on explaining the research to each interview participant. This was accomplished both verbally and in writing.

3.9.8.4 Exiting

Exit ethics refers to ethical considerations that extend beyond the data gathering phase, such as how the researcher will exit the environment and communicates the findings. To ensure that ethics were followed, interview participants were debriefed, and consideration was made to the best way to present the findings or perceptions in order to minimise unexpected or biased implications. Furthermore, to uphold ethical standards, the interview study outcomes will be presented in an anonymous and confidential manner, which includes the interview transcript and audio data.

3.9.9 Safety of the Researcher

Conducting sensitive research can be emotionally demanding, and there is a possibility that researchers can find themselves in dangerous situations (Dickson-Swift *et al.*, 2008). As a result, the researcher's safety was examined. A safety procedure or field risk assessment was designed and applied during the data collection process, to capture the safety plans, such as continual communication with the supervisory team via Zoom or Teams calls to keep them informed of the progress (Appendix 14). The researcher-maintained contact with his supervisors at least twice every week, to discuss progress and obstacles encountered during the data collection process. Also, the researcher's next of kin were always informed of the who, when, where, and for how long the researcher met with participants and gatekeepers. Considering the high rate of insecurity in Port Harcourt and Nigeria as a whole, the researcher also avoided crisis-prone areas during data collection. All interviews took place during the day and on-site at the hospital. The researcher made it a point of leaving the hospital and arriving at his hotel before nightfall for security reasons, since he had been advised by the gatekeeper of some robbery instances in the area at night.

3.10 Chapter Summary

This chapter examines the epistemological and ontological perspectives in research, as well as the rationale for adopting the interpretive paradigm for this qualitative study. The selection of a qualitative design allows the researcher to collect data through semi-structured interviews in order to achieve the study's objectives. The selected methods were demonstrated to be suitable as they are consistent with the research methodology and interpretive philosophical stance. Parents' perceptions of NS for HL are ascertained through semi-structured interviews, and HCPs' perspectives on the research topic are elicited through semi-structured interviews, both of which are useful for gathering pertinent information in this study's context. The thematic analysis method is germane to the in-depth qualitative analysis of in-depth interview data from the accounts of both parents and HCPs. In addition, the chapter describes the ethical considerations and methodological rigour criteria applicable to the study. The utilisation of the methodology described in this chapter is expounded in Chapter 4, which presents the findings from the semi-structured interviews with parents and HCPs.

CHAPTER 4

Results

4.1 Introduction

This chapter focuses on the findings of this study's objectives. It opens with a description of the participants and then presents the identified themes with reference to the research question and objectives.

4.2 Demographic Characteristics of Participants

The semi-structured interviews occurred between June 8, 2022, and July 1, 2022 and were conducted in English. All interviews were conducted F2F (in person) at the UPTH with duration of each interview ranging from 45 to 60 minutes. Participants comprised 16 women and nine men, including 20 parents and five HCPs; Table 10 presents the demographic characteristics of the 25 participants, whose anonymity is ensured by the use of codes.

It can be seen that the ages of the participants ranged from 20 to 59 years. One had a primary education, two had a secondary education, twelve had a higher education (Ordinary Diploma), seven had a university degree, and three had a postgraduate degree. Nineteen participants were employed, two were self-employed, and the remaining four were unemployed. 22 participants were Christians while three participants were Muslims, with 24 being married and one being unmarried. Participants included eight pregnant women, seven mothers with newborn, three fathers, two soon to be fathers, two NGO coordinators, two doctors and a nurse as shown in Table 10.

4.3 Thematic Mapping

Four themes were developed as a result of the analysis, with numerous subthemes, as displayed in Table 11.

Table 10: Participant characteristics

ID	Age Range	Gender	Religion	Education	Marital Status	Subcategory	Employment	No.
Category: Parent								
P1	20-45	Female	Christian	Graduate	Married	Pregnant	Employed	1
P2	20-45	Female	Christian	Graduate	Married	Pregnant	Employed	1
P3	20-45	Female	Christian	Primary	Married	Mother with newborn	Employed	1
P4	20-45	Female	Muslim	Higher	Married	Pregnant	Employed	1
P5	20-45	Female	Christian	Higher	Married	Mother with newborn	Employed	1
P6	20-45	Female	Christian	Higher	Married	Pregnant	Self-employed	1
P7	20-45	Female	Christian	Primary	Married	Pregnant	Employed	1
P8	20-45	Female	Muslim	Higher education	Married	Mother with newborn	Unemployed	1
P9	20-45	Female	Christian	Higher education	Unmarried	Pregnant	Employed	1
P10	20-45	Female	Christian	Graduate	Married	Mother with newborn	Unemployed	1
P11	20-45	Female	Christian	Secondary	Married	Pregnant	Employed	1
P12	20-45	Female	Christian	Higher education	Married	Mother with newborn	Employed	1
P13	20-45	Female	Christian	Graduate	Married	Mother with newborn	Employed	1
P14	20-45	Female	Christian	Higher education	Married	Pregnant	Employed	1
P15	20-45	Female	Christian	Higher education	Married	Mother with newborn	Unemployed	1

Table 10: Participant characteristics

ID	Age Range	Gender	Religion	Education	Marital Status	Subcategory	Employment	No.
Category: Father								
PF1	30-55	Male	Christian	Graduate	Married	Soon to be father	Employed	1
PF2	30-55	Male	Muslim	Secondary	Married	Father	Unemployed	1
PF3	30-55	Male	Christian	Higher education	Married	Father	Self-employed	1
PF4	30-55	Male	Christian	Higher education	Married	Soon to be father	Employed	1
PF5	30-55	Male	Christian	Higher education	Married	Father	Employed	1
Category: HCP								
HCP1	40-59	Male	Christian	Graduate	Married	NGO Coordinator	Employed	1
HCP2	40-59	Male	Christian	Postgraduate	Married	NGO Coordinator	Employed	1
HCP3	40-59	Female	Christian	Graduate	Married	Doctor	Employed	1
HCP4	40-59	Male	Christian	Postgraduate	Married	Nurse	Employed	1
HCP5	40-59	Male	Christian	Postgraduate	Married	Doctor	Employed	1

Total number of interviews conducted: 25

Source: Author

Table 11: Identified themes and subthemes from thematic analysis

HCPs	Parents
THEME ONE: Understanding and Community Perceptions	
• Preventive Healthcare, Early Detection, and Understanding the Causes of HL • Social Perceptions, Stigma, and Advocacy for People with HL	• Causes of NHL (Accident-Related Causes, Bewitchment, Religion and Evil Deeds, Infection and Medical Causes) • Identification of NHL (Behavioural Changes, Reaction to Noise) • Knowledge and Understanding of HL • Perceptions and Attitude to NHL (HL as a Significant Problem, Positive Views of HL, Punishment for Evil Deeds, Stigmatisation)
THEME TWO: Contradictory and Complex Views	
• Awareness, Practice, and Implementation Gaps • HCPs' Perceptions and Experiences of Early Hearing Screening for newborns • Perceived Importance and Personal Commitment to NNHS	• General Understanding of NS for HL • Perceptions and Attitude to NS for HL • Effects of NS on a Child • Cultural and Religious Influences • Culture and Religion • Parents Perceptions of NS for HL (<i>Parents as Decision Makers, Perceptions and Attitudes</i>)
THEME THREE: Factors in Access	
• Cultural and Religious Influences • Economic Constraints and the Turn to Traditional Remedies • Trust in TCM and the Quest for Safety and Standardisation • Cultural Beliefs, Traditional Practices, and Biomedical Systems in NNHS • Cultural Beliefs, Public Perceptions, and TCM	• Cost of Screening Services • Health Seeking Behaviours (<i>Alternative Treatment and Conventional Medicine, Preferred Treatment Options and Efficacy</i>) • Perceived Barriers to NS for HL (<i>Lack of Availability, Awareness and Knowledge of Screening and Availability of Screening Facilities, Carelessness of Medical Professionals</i>)
THEME FOUR: PROMOTING ACCESS	
• Systemic Barriers and Professional Limitations to Effective Hearing Screening • Early Detection and Structural Capacity for UNHS in Port Harcourt • The Clinical Imperative for Early and Continuous Screening • Policy, Educational, and Infrastructural Strategies for Effective Implementation	• Importance of NS for HL • Benefits of Early Detection of NHL • Improving NS for HL • Public Education and Awareness for NS for HL • Improving Healthcare Facilities

Through narrative, this chapter examines these themes and the related sub-themes. As evidence to support the researcher's interpretation of the participants' experiences, the presented analysis includes verbatim excerpts or quotations from participant interview transcripts. The results demonstrate that these main themes are shared by all research participants; however, areas of divergence are also discussed. These themes summarise the narrative of parents and HCPs' attitude and perceptions of access to NS for HL.

4.4 HCPs Results

This part explores the understanding, perceptions, and experiences of HCPs concerning HL and NNHS in Port Harcourt, Nigeria. The findings capture the multifaceted perspectives of five participants (**HCP1–HCP5**), whose narratives reveal an intricate relationship between clinical awareness, cultural beliefs, economic realities, and systemic barriers within the public health landscape. Their accounts collectively illuminate how HCPs conceptualise HL as both a medical and social condition, one that demands preventive care, early detection, and sustained advocacy to mitigate its individual and societal consequences.

The results demonstrate that the professionals possess a sound understanding of the biological and environmental causes of HL, as well as its functional and psychosocial implications. They acknowledge the critical role of early identification through NNHS and recognise the interconnectedness of medical intervention, public awareness, and parental responsibility in effective hearing healthcare. At the same time, participants highlight the persistence of social stigma, cultural misconceptions, and religious ideologies that continue to shape community responses to HL.

Across the interviews, a recurrent tension emerges between knowledge and implementation. While HCPs display strong awareness of global best practices in hearing health, their capacity to apply this knowledge remains constrained by inadequate infrastructure, limited awareness campaigns, and entrenched traditional practices. Economic hardship and trust in traditional remedies further complicate the landscape, revealing how healthcare choices are shaped not only by clinical understanding but also by financial capability and cultural legitimacy. The interplay between these factors situates HL within a broader public health framework where medical, cultural, and structural determinants converge.

4.4.1 THEME ONE (HCPs): Understanding and Community Perceptions

This section presents the findings on HCPs' understanding and perceptions of HL. The participants' narratives revealed two major areas of focus: (1) preventive healthcare, early detection, and understanding of the causes of HL, and (2) social perceptions, stigma, and

advocacy for individuals with HI. These findings represent the collective views of three HCPs (**HCP1**, **HCP2**, and **HCP3**), whose shared experiences provide insight into professional and societal understandings of HL.

4.4.1.1 Preventive Healthcare, Early Detection, and Understanding the Causes of HL

Across participants, there was a shared understanding of the importance of prevention and early identification in managing HL. All three HCPs expressed that preventive measures and timely interventions could significantly improve outcomes for individuals who may be at risk of developing HL.

Participant **HCP1** strongly emphasised the importance of periodic screening as a preventive measure. The participant explained that HL can often be avoided, or its severity reduced through early detection. **HCP1** stated:

“It is essential that individuals undergo periodic screenings to determine if they are at risk for developing HL” (**HCP1**)

According to this participant, regular health checks are necessary for early identification and intervention, ensuring that hearing problems are detected before they progress to severe stages. **HCP1** stressed that preventive measures are a personal responsibility and an essential aspect of maintaining overall health, suggesting that individuals should be encouraged to take active roles in monitoring their hearing status.

HCP2 also emphasised early detection but directed attention to NNHS as a critical preventive step. The participant highlighted that the earliest possible detection occurs at birth and recommended that screening should begin immediately after delivery. **HCP2** stated:

“The most effective method to detect HL at a very early stage, is to begin screening newborns on the day they are born, this is known as neonatal screening” (**HCP2**)

This shows that **HCP2** regarded neonatal screening as a vital procedure for identifying congenital HL and preventing future developmental challenges. The participant further explained that while HCPs play a key role in detection, parents or guardians also have an essential responsibility to observe their child’s developmental progress. As expressed:

“If the child is healthy at the time of birth, but later develops a problem, it is the parent’s or guardian’s responsibility to observe him or her closely” (**HCP2**)

HCP2's comment indicates that family members are viewed as important collaborators in preventive healthcare, especially in monitoring a child's auditory and behavioural development after birth.

Participant **HCP3** shared similar views about the importance of early identification but placed emphasis on the role of scientific advancements and clinical observation in detection. **HCP3** explained that technological tools have contributed significantly to assessing hearing ability in newborns and young children. The participant noted:

“Now, I think some scientific technology has contributed to this in the sense that at birth, for instance, children respond to stimuli when you pinch the skin, they retract their limbs; when you make a loud sound, they turn towards the source of the sound” (**HCP3**)

The observation demonstrates how HCPs use both behavioural cues and technological tools to assess infants' hearing ability. **HCP3's** account highlights the integration of traditional observation techniques with modern technology to facilitate accurate and timely identification of HI.

Together, the responses from **HCP1**, **HCP2**, and **HCP3** show a shared belief in the significance of preventive strategies. They viewed early detection as a cornerstone of hearing healthcare, where both professional screening and family observation contribute to better outcomes. In addition to prevention and detection, participants discussed their understanding of the causes and characteristics of HL. Their explanations reflected both clinical and experiential perspectives. **HCP1** described HL as primarily biological, resulting from damage to the inner ear or auditory nerves. The participant explained:

“A significant or total loss of hearing that may be due to congenital inner ear damage” (**HCP1**)

The participant elaborated further, saying:

“Just a damage to the inner ear or the ear nerves” (**HCP1**)

In describing the sensory experience of HL, **HCP1** also stated:

“Just a lack of sound or a serious HI” (**HCP1**)

These descriptions show that **HCP1** viewed HL as a condition rooted in physiological dysfunction, mainly involving damage to the structures responsible for hearing. The

participant's explanation demonstrates familiarity with the auditory system and the different levels of impairment that may occur depending on the extent of inner ear or nerve damage.

HCP2, while also acknowledging biological causes, broadened the discussion by pointing to situational and environmental factors that can lead to HL. The participant stated:

“To the best of my knowledge, HL is an issue that develops in response to circumstances” (**HCP2**)

According to this participant, not all HL is congenital; in some cases, it can be acquired due to environmental exposures or birth-related incidents. **HCP2** explained further:

“And then some of them can be as a result of an accident at birth, some can be as a result of some environmental factors that the mother exposes herself to during the first trimester or during the period of pregnancy which is situational” (**HCP2**)

This statement reflects awareness of how maternal health and environmental conditions during pregnancy may contribute to the development of HL in infants. The participant also mentioned chronic infections as another cause, particularly middle ear infections that persist without treatment. **HCP2** explained:

“Others can also be as a result of an illness, perhaps an infection in the middle ear, otitis media being there for a long time with mucus and all that, that result in HI being the endpoint of it” (**HCP2**)

This demonstrates that participants viewed HL as multifactorial, arising from biological, environmental, and medical factors.

Participant **HCP3** described HL in functional terms, focusing on how it affects an individual's ability to perceive and respond to sound. The participant stated:

“I believe it has to do with the inability to hear, understand, and respond to noises” (**HCP3**)

This description highlights the connection between HL and its impact on communication, social interaction, and daily functioning. Participants also mentioned behavioural indicators that could help in identifying HL. **HCP1**, in particular, highlighted changes in voice control and reaction to sound as common symptoms. The participant said:

“The person cannot hear unless you shout or increase the volume of your voice and he will not be able to detect that his voice is loud, so he will speak louder than usual” (**HCP1**)

This example shows that HCPs rely on observation of communication patterns to identify potential hearing issues. The participants demonstrated an informed understanding of HL as a condition that can be prevented, detected early, and influenced by a combination of genetic, environmental, and medical factors. They also acknowledged observable signs that can assist in recognising HL before it becomes severe.

4.4.1.2 Social Perceptions, Stigma, and Advocacy for People with HL

The second sub-theme focuses on how participants perceived the social and cultural attitudes towards HL and how they viewed their roles in promoting inclusion and advocacy. Participants described a widespread lack of understanding about HI in their communities, often resulting in stigma, discrimination, and exclusion of affected individuals.

HCP1 and **HCP3** both discussed the existence of strong cultural beliefs that associate HL with supernatural or spiritual causes. Participant **HCP1** stated:

“They could see it to be diabolic and if they see it to be diabolic, the method of approach will be different and they also see it as something forbidden, not important and as abomination” (**HCP1**)

This quote illustrates how HL is sometimes perceived as something evil or abnormal, which can lead to rejection or avoidance. According to **HCP1**, such perceptions influence how people with HL are treated and the kind of support they receive from their communities.

HCP3 expressed similar views but described HL as a condition associated with misfortune or divine punishment. The participant said:

“Well, in this country, the society views it like ehm a debilitating illness as whereby one is being cursed by the gods or one is unfortunate and for that reason, they are being segregated just the way people with HIV are segregated” (**HCP3**)

This statement reflects the existence of stigma and social exclusion associated with HI. The participant compared this exclusion to the discrimination experienced by individuals living with HIV, indicating that both groups face similar societal reactions of pity, fear, or avoidance.

HCP3 went further to explain how societal exclusion affects the emotional and social wellbeing of those with HL. The participant observed:

“From my observation so far, there is societal exclusion to people with HLes and this has led them to segregating these ones away from what they should actually get, this has made people with HL or people who are hard at hearing to become reactive in the society thereby making them feel inferior with no social equality among these people and oppressed or suppressed in the society” (**HCP3**)

This shows that the participant recognised the link between social attitudes and self-perception, noting that exclusion often results in feelings of inferiority and alienation among people with HL.

While acknowledging that social stigma exists, participants also described efforts to promote equality and inclusion. **HCP2** and **HCP1** both expressed positive attitudes toward advocacy and normalisation of HL. **HCP2** identified herself as an advocate for individuals with HIs, saying:

“So, I see myself as an advocate to supporting people with HI because for me they also have a right to purposeful living just like everyone” (**HCP2**)

This statement illustrates the participant’s personal and professional commitment to ensuring that people with HL are treated fairly and given equal opportunities. **HCP2** viewed advocacy as part of her role in improving public awareness and ensuring that people with HI are supported to live fulfilling lives.

Similarly, **HCP1** stressed the importance of recognising the normalcy of individuals with HL. The participant stated:

“People with HL they are normal persons just like you and I” (**HCP1**)

This reflects the participant’s belief that HL does not diminish a person’s worth or capability. It demonstrates a positive and inclusive attitude towards people with disabilities, promoting equality and respect.

Participant **HCP3** shared a related but more clinically focused view, expressing gratitude for technological innovations that help people manage HL. The participant said:

“Ok, I view HL as a medical case that could be addressed, and I am grateful to technology so far it has gone as far as creating hearing aids so it can seek for the loss or defect in the human being” (**HCP3**)

This statement shows appreciation for scientific progress in treating HL, particularly through the use of hearing aids. **HCP3**’s remarks suggest that technology plays a key role in improving the quality of life for those affected, helping them to communicate effectively and reintegrate into social environments.

When considered together, the responses from all three participants indicate an awareness of both the challenges and opportunities surrounding HL. While **HCP1** and **HCP3** described the social and cultural stigma associated with HL, **HCP2** and **HCP1** focused on advocacy and equality. Their collective perspectives reveal that HCPs not only recognise the medical aspects of HL but also understand the importance of social inclusion, awareness, and support for affected individuals.

4.4.2 THEME TWO (HCPs): Contradictory and Complex Views

4.4.2.1 Awareness, Practice, and Implementation Gaps

This sub-theme explores HCPs’ diverse perspectives on the screening process for HL in newborns. The participants provided accounts that reflected both conceptual understanding of screening and the real-world barriers to its consistent implementation in clinical practice. Their narratives collectively illustrate an intersection between medical knowledge, healthcare system limitations, and cultural practices influencing NNHS in their context.

Participant **HCP1** provided a clear description of what hearing screening entails, framing it as an essential preventive measure. The participant defined screening as an evaluative process designed to identify actual or potential hearing difficulties at the earliest stage. As stated:

“Screening for HL is a test to know if somebody has HL or has potential HL”
(**HCP1**)

This definition highlights that the participant understood screening as both a diagnostic and preventive procedure. The explanation demonstrates awareness that HL screening serves not only to confirm an existing condition but also to identify individuals who may be at risk. This forward-looking orientation reflects a recognition of the proactive role that early screening can play in mitigating the adverse effects of HL.

However, despite this clear understanding of the concept, **HCP1** also revealed a stark contrast between theoretical awareness and practical application. The participant explained that while

NNHS is standard practice in certain developed settings, such procedures are rarely available in their local context. **HCP1** noted:

“I know in maybe advanced countries I know maybe screening for newborn can be done, I’ve not heard of it being practised in my area” (**HCP1**)

This statement underscores a profound disparity in healthcare provision between different regions. **HCP1**’s reference to “advanced countries” reflects an implicit understanding that NS is a global health standard, yet one that remains largely inaccessible in less-resourced environments. The absence of such services locally may stem from limited infrastructure, lack of professional training, and inadequate public awareness. The participant’s observation points to systemic inequities in healthcare delivery that result in uneven access to preventive interventions. The contrast between the participant’s theoretical knowledge and the practical reality of implementation encapsulates the global gap in equitable healthcare access for newborns.

When considering **HCP1**’s perspective in totality, two key dimensions emerge. The first is an awareness of screening’s medical and preventive value; the second is an acknowledgment of its limited application in certain healthcare contexts. This juxtaposition highlights how even when healthcare workers understand best practices, institutional and structural limitations can hinder their translation into routine care.

In a similar vein, **HCP2** also discussed NNHS, but offered a more comprehensive view of its purpose and the challenges affecting its adoption. The participant described neonatal screening as a holistic medical process aimed at verifying the functional health of a newborn’s organs, including auditory capacity. As **HCP2** explained:

“NHL screening can also be called neonatal screening. It is a screening given or done when the baby is born to ascertain the effectiveness of all the organs of the body if they are working at the right proportions, if they are working very well” (**HCP2**)

This description shows that **HCP2** understood NNHS as part of a broader postnatal health assessment, designed to ensure that all vital organs are functioning optimally. The participant viewed screening as a key component of preventive healthcare, contributing to early identification of not only HIs but also other developmental issues. This aligns with global best practices in neonatal care, which emphasise early assessment as essential for lifelong health outcomes.

Nevertheless, **HCP2** went on to describe a significant gap between the ideal standards of practice and the reality within local healthcare institutions. The participant highlighted widespread unawareness, inadequate implementation, and reliance on traditional delivery methods as major barriers to neonatal screening. As expressed:

“But the funny thing is that as good as the neonatal screening is to a child or for a child at the day of delivery, many persons are not aware of that and because of lack of exposure many hospitals don’t even pay attention to this segment of examination while the mum go to what we called midwives, some persons who claimed to be experienced in child delivery and then once the child is born the child is cleaned up and then the mother is allowed to go home”

(**HCP2**)

This statement reveals a multifaceted problem involving individual, institutional, and cultural dimensions. The participant identified low public awareness and lack of institutional priority as key factors preventing effective screening. The description of mothers seeking childbirth assistance from traditional midwives rather than health facilities illustrates how entrenched cultural practices continue to shape postnatal care patterns. In such traditional settings, the focus often remains on ensuring a safe delivery rather than conducting comprehensive neonatal evaluations.

By describing these challenges, **HCP2** illuminated systemic barriers that go beyond the scope of individual healthcare workers. The participant’s account points to an underlying institutional neglect where neonatal screening is not integrated into standard care protocols. It also reveals a gap in healthcare education, both among the public and within healthcare facilities—regarding the value of early detection.

When viewed together, **HCP1** and **HCP2** expressed aligned concerns about the disparity between global standards and local practice. Both participants demonstrated an understanding of the significance of NNHS but noted that the procedure remains largely inaccessible or neglected in their contexts. The consistency of their narratives highlights an ongoing tension between awareness and implementation.

While **HCP1**’s experience underscored geographical inequality and infrastructural limitations, **HCP2**’s reflections extended to include sociocultural and institutional barriers. Both participants identified systemic issues such as lack of awareness, insufficient health education, and the dominance of traditional birthing practices that deprioritise neonatal

assessments. Together, their testimonies present a comprehensive picture of how various levels of limitation, structural, institutional, and cultural—combine to restrict NS services.

Across these accounts, a shared recognition emerges regarding the importance of early detection and the adverse consequences of its absence. The participants demonstrated awareness that neonatal screening serves as a preventive gateway for the timely identification of conditions like HL. They acknowledged that without such screenings, opportunities for early intervention and treatment are missed, which can negatively affect speech, language, and cognitive development. However, despite understanding its significance, participants consistently highlighted barriers that impede the universal adoption of screening practices.

Collectively, their narratives capture a paradox in public health practice: the coexistence of medical awareness and systemic inaction. On one hand, HCPs recognise NNHS as an indispensable aspect of preventive medicine. On the other hand, they are constrained by structural inefficiencies, limited resources, and entrenched traditions that prioritise immediate delivery outcomes over comprehensive postnatal assessments.

The combined insights of **HCP1** and **HCP2** also draw attention to the broader public health implications of uneven healthcare implementation. Their testimonies suggest that access to essential screenings may depend heavily on location, institutional capacity, and cultural orientation. This unevenness perpetuates health inequities where infants born in resource-limited areas remain at higher risk of undetected impairments compared to those in better-resourced settings.

The participants' perspectives collectively illustrate a multilayered understanding of NNHS. While all participants acknowledged its clinical value and preventive potential, they also recognised widespread barriers affecting its practice. The findings reveal that NS for HL is understood in principle but inconsistently executed in reality due to gaps in awareness, infrastructure, and institutional prioritisation.

These narratives underscore the pressing need for systemic reforms to ensure universal access to NNHS. Effective public health strategies, such as health education campaigns, integration of neonatal screening into hospital protocols, and training of both professional and traditional birth attendants—could bridge the existing gap between knowledge and practice. Ultimately, the participants' accounts reaffirm that the success of neonatal screening depends not only on clinical expertise but also on collective societal commitment to equitable healthcare access.

Overall, the findings show that HCPs possess a well-rounded understanding of HL that encompasses prevention, detection, and social awareness. The participants recognised that regular screening, early detection, and parental observation are vital in identifying and managing HI. They also understood that HL can result from congenital, environmental, or health-related factors, and that behavioural changes can be key indicators of the condition.

The findings further reveal that participants were aware of the negative social perceptions associated with HL in their communities. They described how misconceptions and stigma often lead to exclusion, discrimination, and emotional distress for those affected. However, they also expressed commitment to advocacy, equality, and the use of technology as strategies for improving understanding and support for individuals with HI. The HCPs' narratives collectively show that HL is viewed as both a medical and social issue, one that requires prevention, early detection, and greater public awareness to ensure inclusion and equality for all affected individuals.

4.4.2.2 HCPs' Perceptions and Experiences of Early Hearing Screening for newborns

This theme explores the perceptions, attitudes, and lived experiences of HCPs concerning early hearing screening for infants in Port Harcourt, Nigeria. The findings illustrate how HCPs recognise the importance of early hearing detection, while simultaneously revealing cultural, religious, and systemic barriers that influence its implementation and public acceptance. Across all interviews, participants consistently emphasised the need for awareness, proactive health-seeking behaviour, and community education to improve NNHS practices. Two sub-themes were identified from the data: (1) Perceived Importance and Personal Commitment to NNHS, and (2) Cultural and Religious Influences on Health-Seeking Behaviour and Hearing Health Practices.

4.4.2.3 Perceived Importance and Personal Commitment to NNHS

Across the interviews, participants demonstrated a strong awareness of the value of early hearing screening for infants. Each HCP expressed varying degrees of personal commitment, professional awareness, and perceived urgency regarding NS. While all participants recognised its importance, they differed in how they described their motivations, level of advocacy, and understanding of public attitudes towards screening.

Participant **HCP1** acknowledged both the medical and personal significance of hearing screening. The participant observed that while they would prioritise the procedure for their own child, this sentiment was not widely shared within the community. As **HCP1** stated:

“I feel it’s important and my child should undergo a screening for HL, but most people don’t really take it as important” (**HCP1**)

This statement demonstrates a clear awareness of the value of early detection but also highlights a disconnect between professional understanding and public perception. The juxtaposition between the participant’s personal conviction and the general community’s indifference underscores a lack of awareness or understanding of the purpose and benefits of hearing screening. The use of the phrase “most people don’t really take it as important” points to an underlying public apathy, which may stem from limited health education, lack of access, or prevailing cultural attitudes.

While **HCP1**’s response reflected concern over low community prioritisation, **HCP2** expressed a deep emotional and professional commitment to promoting early hearing screening. Their statement went beyond personal application to encompass advocacy for family and community members:

“And so for me as a person... for me with the knowledge I have gotten about these conditions, I will ensure that my child, my brother, my sister, my nephew, everyone close to me go for hearing screening so that it will help them fast track the process of rehabilitation so as to help that child have a meaningful life. So is something I hold so dear, is something that I will do today, tomorrow and whenever there is opportunity” (**HCP2**)

The quote above reflects not only professional knowledge but also a sense of moral responsibility. The participant’s repeated use of temporal markers (“today, tomorrow and whenever there is opportunity”) emphasises sustained commitment and urgency. **HCP2** associates early screening with rehabilitation and meaningful living, demonstrating an understanding of the long-term developmental benefits of timely intervention. The narrative also reflects a belief that knowledge shapes behaviour, as the participant explicitly links their proactive stance to: “the knowledge I have gotten about these conditions”. This awareness-driven motivation highlights how professional education can influence personal and familial decision-making regarding preventive health care.

Participant **HCP3** shared similar views but articulated their response in more practical and preventive terms. Their statement revealed both an awareness of the risks of undiagnosed HL and an understanding of screening as an essential safeguard:

“Yes, I will be very interested to screen my child for HL because I do not want my child to have a debilitating illness. I’ll like to ensure that whatever problem

is identified from the onset and adequate treatment is given to prevent further deterioration” (**HCP3**)

This captures a pragmatic and preventive orientation toward healthcare. The use of “debilitating illness” reflects an awareness of the potential severity of untreated HI, while the reference to “adequate treatment” underscores confidence in medical intervention as a means of mitigating its effects. Compared to **HCP2**, whose emphasis was on emotional and familial commitment, **HCP3** expressed a more clinical and action-oriented approach grounded in medical logic.

Taken together, the perspectives of **HCP1**, **HCP2**, and **HCP3** demonstrate a shared recognition of NNHS as a valuable preventive measure. However, the intensity of their commitment varies. **HCP1** highlights societal neglect, **HCP2** demonstrates passionate advocacy, and **HCP3** emphasises medical pragmatism. The convergence of these views underscores an overarching professional awareness of the importance of screening, tempered by the recognition that public attitudes remain a significant obstacle.

Further elaborating on the nature of screening, **HCP3** clarified the process as a safe and non-invasive clinical practice:

“Screening for HL is just going to be an assessment, and it is going to be an internal means of getting information. It’s going to be a superficial means, so it shouldn’t affect the child” (**HCP3**)

This description illustrates the participant’s attempt to normalise the procedure, perhaps in response to misconceptions or fears among parents. The term “superficial means” suggests reassurance that screening poses no risk to infants. It also reflects a clinician’s perspective that frames hearing screening as a routine assessment, an important but harmless data-gathering process. The participant’s effort to demystify the procedure reveals an implicit awareness of parental anxiety or misinformation, reinforcing the need for public education to normalise hearing screening as part of standard postnatal care.

Across the participants, this sub-theme reveals the coexistence of professional conviction and perceived societal indifference. While HCPs personally endorse NNHS and express confidence in its benefits, they remain aware of significant knowledge gaps among the public. This divergence between professional awareness and community perception highlights the need for widespread health promotion initiatives to increase understanding and participation in NNHS programmes.

HCP1's concern about public apathy, **HCP2**'s strong familial advocacy, and **HCP3**'s practical emphasis on prevention and safety collectively depict a professional community committed to early detection but constrained by societal attitudes. Their shared narratives illustrate a unified belief that early screening can profoundly improve quality of life for affected children, yet widespread awareness and accessibility remain critical challenges.

4.4.3 THEME THREE (HCPs): Factors in Access

For HCPs, this theme pertained to health-seeking behaviour and hearing health practices they observed among service users.

4.4.3.1 Cultural and Religious Influences

While participants agreed on the medical importance of early hearing screening, they also highlighted cultural and religious factors that significantly influence parental attitudes and health-seeking behaviours. Their narratives revealed how deeply embedded belief systems—particularly those relating to religion, spirituality, and traditional practices—shape community perceptions of HL and decisions regarding screening and intervention.

Participant **HCP2** provided a vivid description of Nigeria's highly religious environment, explaining how faith often intersects with health decisions:

“Nigeria is a religious community or country; we are so religious that we allow that to interfere in even our personal lives. We've had experiences of people whom their children developed hearing problem because of their delay in taking this child for proper screening and intervention” (**HCP2**)

This account suggests that religious devotion, while personally meaningful, can sometimes delay timely medical care. The participant's use of “interfere” implies tension between faith and medical reasoning. By recounting cases where children's conditions worsened due to delayed screening, **HCP2** highlighted the tangible consequences of such beliefs. The participant's reference to “proper screening and intervention” reflects an awareness of both the medical necessity of early detection and the barriers posed by overreliance on faith-based responses.

Supporting this perspective, **HCP4** elaborated on how spirituality manifests during crises, describing the universal human inclination to seek divine intervention. The participant explained:

“So once a tragedy strikes, there is always a spiritual or religious connotation attached by many people, and as such the Christians will call out to their God

begging him for miraculous intervention, the Muslims will call on Allah, while the traditionalists will also have their deities whom they reverence” (**HCP4**)

Here, **HCP4** captured the instinctive, cross-religious response to adversity. This statement not only emphasises the spiritual depth of Nigerian society but also highlights the cultural reflex to interpret illness through a religious lens. The inclusion of Christians, Muslims, and traditionalists demonstrates the pervasiveness of this worldview across faith boundaries.

In a follow-up reflection, **HCP4** drew a direct connection between religious conviction and delayed medical action:

“So with all these religious norms, they will not at the first instance seek medical screening and interventions since it is their core belief system and it aligns with their faith to call out to a supernatural being for help” (**HCP4**)

This observation shows that strong spiritual beliefs can sometimes discourage or postpone medical intervention. The emphasis on “core belief system” conveys the depth of faith’s influence on decision-making. **HCP4**’s insight illustrates a recurring challenge for HCPs: navigating the intersection between cultural reverence for divine healing and the need for timely clinical assessment.

Expanding this discussion, **HCP2** and **HCP4** both acknowledged that while spirituality provides comfort, it may also perpetuate misconceptions about the causes of HL. As **HCP2** observed:

“Nigeria is a religious country particularly Port Harcourt is one place that have very many persons that have this belief in faith and so they want to do whatever their leaders will say” (**HCP2**)

This reflection reveals the hierarchical nature of faith communities, where religious leaders wield considerable influence over members’ choices. In such settings, health decisions may depend more on spiritual authority than medical advice. Consequently, HCPs face the challenge of aligning public health strategies with culturally respected channels of influence.

The stigma associated with HL also emerged prominently in the participants’ accounts. **HCP2** highlighted that negative social perceptions often link HL to supernatural or malevolent causes:

“The perception of people with HL is on the negative side because a lot of people believe that people who are hearing impaired, the cause of it is tied to a demonic action, is tied to somebody who hates them” (**HCP2**)

This statement underscores how stigma, rooted in spiritual misattribution, continues to shape attitudes toward HL. When HI is perceived as the result of “demonic action,” it not only isolates affected individuals but also deters families from pursuing medical evaluation. Instead, they may seek deliverance or spiritual cleansing rather than medical care, thereby delaying critical interventions.

The participant further elaborated on how such beliefs discourage engagement with screening programmes:

“It is not something that can happen medically, is not something that can happen by accident. They don’t have that belief, because of that they are now nonchalant about going for hearing screening whether during pregnancy to ensure that the child is developing well at birth to ensure that all the organs of the body are intact or even after birth to ensure that the development of the child is following the normal procedure” (**HCP2**)

This observation reinforces that entrenched cultural beliefs can lead to widespread nonchalance about hearing screening, both prenatal and postnatal. By denying the possibility of medical or accidental causation, communities perpetuate inaction. The participant’s reference to screening “during pregnancy” and “after birth” demonstrates awareness of preventive health strategies but highlights the missed opportunities due to misinformation.

Participant **HCP3** offered additional insights into maternal perceptions and cultural attitudes regarding health screening. They noted that mothers often prioritise visible health indicators and may resist further testing:

“Okay, originally, every mother in Africa, Nigeria precisely will want to feel like their children are healthy and that they should not investigate more than necessary. On a contrary, based on professional experience, apart from the Apgar score that is given to a child at birth, we should go as far as checking sounds – the ability to perceive sound and to respond to situations. This will help” (**HCP3**)

This quotation reveals a clash between cultural optimism and medical caution. **HCP3**’s use of “should not investigate more than necessary” highlights a tendency among parents to equate apparent wellness with overall health. This attitude, though reassuring, may result in neglect of preventive examinations like hearing screening. The participant’s emphasis on extending postnatal checks “beyond the Apgar score” signals the importance of comprehensive neonatal evaluations that include auditory testing.

Building on this, **HCP3** provided a practical recommendation to address resistance from mothers:

“A sudden request to screen for HL may not be welcome by most of our mothers; they will need to be pre-informed prior to the screening time” (**HCP3**)

This statement suggests a culturally sensitive approach to introducing NS. By recommending advance communication and preparation, **HCP3** acknowledges the need for empathy and respect for parental beliefs. The comment implies that resistance often stems from surprise or misunderstanding, which can be mitigated through counselling and prior education.

In addition to discussing barriers, **HCP2** expressed strong empathy toward individuals with HL, reflecting years of personal interaction and advocacy:

“Personally, people with HL I would say they are my community members. Because for over two decades now I have been interacting with them, I’ve come to understand them. They are like every other person. They have passion like every other person; they have dreams, aspiration, and love to share. It’s just a thing of saying the misfortune of their auditory mechanism that placed them in that situation” (**HCP2**)

Here, **HCP2** humanises individuals with HL, reframing the condition as a physical circumstance rather than a defining identity. The participant’s reference to them as “community members” reflects inclusion and shared humanity, challenging the societal stigmas previously described. This empathetic stance indicates the potential for HCPs to serve as both caregivers and advocates, bridging the gap between medical understanding and community misconceptions.

Collectively, the perspectives of **HCP2**, **HCP3**, **HCP4**, and others reveal how cultural and religious frameworks influence hearing health behaviours. Their narratives show that while faith offers emotional comfort and community cohesion, it can inadvertently delay medical care and perpetuate stigma. Conversely, HCPs like **HCP2** and **HCP3** advocate for culturally informed interventions that respect beliefs while promoting evidence-based practices. The participants’ emphasis on empathy, communication, and education reflects an awareness that sustainable change requires sensitivity to cultural realities rather than confrontation.

Overall, the findings reveal that HCPs in Port Harcourt recognise the critical role of early hearing screening in preventing long-term impairment and promoting child development. The participants expressed a unified belief in the value of NS but identified significant barriers—

most notably cultural, religious, and informational factors—that limit its acceptance and implementation. The HCPs demonstrated strong personal commitment to NS, reflecting diverse motivations rooted in professional knowledge, empathy, and preventive care. However, they also recognised public indifference and misinformation as obstacles to widespread adoption. Additionally, participants described how religious beliefs, cultural norms, and social hierarchies shape community responses to HL. Deeply held faith-based explanations often delay medical screening, while stigma and fatalistic attitudes perpetuate avoidance. Nonetheless, participants proposed that culturally sensitive communication, education, and advocacy could bridge these gaps and foster greater acceptance of hearing health practices.

These participants' perspectives illustrate the dual reality of awareness and constraint. While HCPs are knowledgeable and personally committed to early hearing screening, their efforts operate within a sociocultural context where faith, tradition, and limited awareness continue to influence health-seeking behaviours. Addressing these complex dynamics requires not only medical intervention but also sustained community engagement, education, and collaboration with cultural and religious leaders to ensure equitable access to hearing health services.

4.4.3.2 Economic Constraints and the Turn to Traditional Remedies

The financial dimension of healthcare access emerged as a pivotal theme in the narratives of HCPs, particularly in contexts where families face significant economic hardship. **HCP4** offered a comprehensive and systemic perspective on this issue, stating:

“The cost implication of the medical care pathway is a strong determinant because most of these families are of very little means of livelihood” (**HCP4**)

This observation underscores the multifaceted nature of the healthcare journey, which encompasses not only initial screenings but also subsequent treatments, evaluations, and associated services. The term “medical care pathway” implies a continuum of care that becomes increasingly inaccessible for economically disadvantaged families, thereby creating a persistent and systemic barrier to adequate health provision.

HCP4's viewpoint aligns with that of P9, though it extends beyond the limited scope of screenings to encompass the broader healthcare infrastructure. The emphasis on financial burden as a determinant of health-seeking behaviour reveals a structural inequity that disproportionately affects low-income households. These families often find themselves navigating a healthcare system that is not only complex but also financially prohibitive, leading to delayed or foregone medical interventions.

Supporting this notion, **HCP5** highlighted the perceived affordability of TCM:

“TCM is also perceived to be cheaper than conventional medicine” (**HCP5**)

This perception is not merely anecdotal but reflects a pragmatic response to economic constraints. For many individuals, traditional remedies represent a financially viable alternative to conventional treatments, especially when the latter are deemed unaffordable or inaccessible. The endorsement of TCM, therefore, is frequently rooted in economic necessity rather than clinical preference.

HCP5 further elaborated on the types of traditional remedies commonly employed, particularly in the treatment of HL:

“Some persons may decide to seek for traditional remedy and by traditional remedies for HL; they may want to use certain concoctions, herbal concoction or decoctions.” (**HCP5**)

The use of culturally embedded terms such as “concoctions” and “decoctions” suggests a reliance on indigenous knowledge systems that have been passed down through generations. These practices are often legitimised by cultural norms and anecdotal evidence, forming a parallel healthcare system that operates independently of formal medical institutions.

Accessibility emerged as another critical factor influencing the preference for TCM. As **HCP5** noted:

“It is also easily accessible because most times they are not prescription medicine, so based on these some persons will tend patronise this alternative form of health care” (**HCP5**)

This statement highlights the logistical advantages of traditional remedies, which are often available over the counter and do not require formal prescriptions. In communities where access to licensed HCPs is limited, the ease of obtaining traditional treatments becomes a decisive factor in health-seeking behaviour.

In contrast, **HCP2** and **HCP3** offered insights into the cognitive and emotional dimensions of healthcare decision-making, particularly in relation to financial capacity and personal awareness. **HCP2** remarked:

“Personally, because of the awareness I have, I would pay. I can’t say same for other persons because my own condition is different from other persons financially” (**HCP2**)

This statement reveals a nuanced understanding of the interplay between health literacy and economic agency. **HCP2**’s willingness to invest in healthcare is driven by a heightened awareness of its importance, yet there is a clear recognition that others may not share this privilege due to financial limitations. The quote underscores the need for both educational interventions and economic support mechanisms to ensure equitable access to healthcare.

HCP3 adopted a more pragmatic and solution-oriented stance, emphasising the role of negotiation in overcoming financial barriers:

“Well, everything has to be bargained for. If you cannot pay for it once, then you can pay by instalment and it’s an approved method of payment, then why not?! It’s my child and I want the best for my child” (**HCP3**)

This approach reflects a form of financial adaptability, where staggered payments are utilised to manage healthcare costs. The emotional undertone of parental responsibility further illustrates the lengths to which individuals are willing to go to secure medical care for their dependents, even in the face of economic adversity.

Taken together, these narratives reveal a complex and layered understanding of healthcare decision-making in resource-limited settings. **HCP4** and **HCP5** converge on the theme of economic constraint as a driver of TCM use, while **HCP2** and **HCP3** highlight individual agency and adaptive strategies within the conventional healthcare system. Despite their differing approaches, all participants acknowledge the centrality of financial considerations in shaping health-seeking behaviour.

The juxtaposition of traditional and conventional healthcare modalities reflects a broader tension between cultural practices and institutional systems. TCM, with its affordability and accessibility, offers an immediate solution to pressing health needs, albeit one that may lack formal validation. Conventional medicine, while potentially more effective, remains out of reach for many due to its cost and structural barriers. This dichotomy necessitates a re-evaluation of healthcare policies to incorporate culturally sensitive and economically inclusive strategies.

4.4.3.3 Trust in TCM and the Quest for Safety and Standardisation

This theme explores the interplay between economic, cultural, and safety considerations that shape parents' healthcare decisions regarding childhood illnesses, particularly HL. The reflections of **HCP4** reveal a nuanced and multifaceted understanding of how TCM continues to influence health-seeking behaviour in contexts such as Port Harcourt, Nigeria. The narratives illustrate the coexistence of deeply rooted cultural belief systems with modern health practices and highlight the ongoing tension between accessibility and safety in the use of herbal and traditional remedies. The following analysis delineates two interrelated, yet distinct perspectives expressed by **HCP4**: the economic and cultural appeal of TCM on one hand, and the professional apprehension about the safety and lack of quality assurance on the other.

HCP4 underscores several fundamental determinants that guide parents' healthcare decisions, particularly when seeking care for their children. Central to these determinants are affordability, accessibility, perceived safety, and cultural congruence. As **HCP4** observes,

“So, most parents will readily exploit the traditional care pathway because it is cheap, accessible, perceived to be 100% safe due to its origin from nature and also it aligns with their belief systems” (**HCPX**)

This statement encapsulates the intersection of practical necessity and cultural tradition in parental decision-making. It points to a persistent economic dimension wherein cost serves as a decisive factor influencing the choice of care. The notion of “cheap” care underscores the financial limitations faced by many families, suggesting that parents often make pragmatic decisions within the constraints of their economic circumstances.

The emphasis on “accessibility” implies that traditional healers and local herbal practitioners are not only geographically closer but also socially and culturally more approachable than formal medical institutions. Parents may perceive conventional healthcare systems as bureaucratic, distant, and costly, both in monetary terms and in terms of the time and effort required to navigate them. In contrast, traditional healthcare channels are embedded within community structures and governed by familiar norms, allowing for a sense of trust and immediacy. This accessibility is therefore both physical and relational, representing a system in which patients can easily engage and feel understood.

Moreover, **HCP4**'s observation that traditional care is “perceived to be 100% safe due to its origin from nature” reflects a culturally pervasive but scientifically misleading assumption: that natural substances are inherently harmless. This perception, while deeply ingrained, reveals

the complexity of health beliefs in traditional societies. It reflects the symbolic value of nature as pure and benevolent, contrasting it with the artificiality and perceived toxicity of modern pharmaceuticals. However, this assumption often obscures the potential risks associated with unregulated herbal mixtures. The belief in the intrinsic safety of natural products represents a form of cultural logic that prioritises traditional epistemologies of healing over empirical evidence.

The fourth dimension of **HCP4**'s reflection, that traditional care "aligns with their belief systems," introduces the critical role of cultural and spiritual frameworks in shaping health behaviour. In many African societies, including Port Harcourt, health and illness are conceptualised holistically, often linked to spiritual, social, and moral factors. Thus, parents' healthcare choices are rarely made in isolation; they are influenced by family traditions, community norms, and inherited belief systems. The alignment of traditional care with these belief systems not only sustains its popularity but also reinforces its legitimacy in the eyes of community members.

Collectively, these insights reveal that parents' preference for TCM is driven by a convergence of economic necessity, cultural identity, and perceived safety. This multifactorial inclination, however, poses challenges to the uptake of modern medical interventions, including NNHS and early intervention services. It demonstrates that parental decision-making in health contexts is not merely a matter of rational choice but a deeply social and cultural act, embedded within the lived realities of poverty, belief, and trust.

In further elaboration, **HCP4** offers an additional layer of reflection by acknowledging both the therapeutic potential and the limitations of herbal medicine. The participant recognises that:

"We do know that we have many medicinal plants that can help in the management of certain diseases however, standardisation and quality assurance are the problems we are facing with herbal remedies" (**HCPX**)

This represents a balanced professional perspective that neither dismisses TCM outright nor romanticises it uncritically. The acknowledgment of the healing potential of medicinal plants aligns with a growing body of scientific research affirming the pharmacological value of various indigenous herbs. However, **HCP4**'s concern centres on the systemic challenges of standardisation and quality control that hinder the safe and consistent use of these remedies.

Standardisation refers to the establishment of consistent dosages, preparation methods, and chemical compositions in herbal treatments. The inherent variability in plant growth conditions, harvesting methods, and preparation processes contributes to inconsistencies in potency and

effectiveness. Quality assurance, on the other hand, pertains to ensuring that herbal products are free from contaminants, correctly labelled, and safe for consumption. The lack of such regulatory mechanisms, as noted by **HCP4**, presents a significant barrier to integrating TCM into formal healthcare systems. This tension underscores a broader epistemological divide between traditional and biomedical paradigms, the former grounded in empirical community knowledge and the latter in scientific validation and regulatory oversight.

The participant's comments further illuminate a pressing concern shared by both HCPs and some parents: the absence of regulatory structures that could ensure safety in the production and administration of herbal concoctions. **HCP4** explains,

“Food manufacturing processes are also lacking, good clinical practice is also an issue, so you can't guarantee the safety because there are no good quality assurance when those concoctions and what have you are prepared” (**HCPX**)

The use of the term “lacking” conveys a profound deficiency in the infrastructural and procedural systems that underpin safety and efficacy in healthcare production. This deficiency extends from the point of manufacture to clinical application, suggesting a breakdown in both industrial and clinical governance mechanisms.

The critique of “food manufacturing processes” implies that even at the most basic level of preparation, herbal remedies often fail to meet the hygiene, processing, and labelling standards required in modern pharmaceutical production. Similarly, the reference to the absence of “good clinical practice” highlights the limited use of scientific testing and ethical oversight in the evaluation of herbal therapies. This lack of adherence to standardised research protocols not only jeopardises patient safety but also undermines the credibility of traditional remedies in medical discourse.

HCP4 further strengthens this position by expressing apprehension about the possible toxicities of herbal preparations:

“So, we [are] much more concerned about the safety profiles of such herbal preparations and that's why we do not recommend them due to the susceptibility of toxicities or adverse health reactions that may be associated with these substances” (**HCPX**)

The reference to “safety profiles” underscores the professional concern for empirical evidence and systematic evaluation of potential side effects. It reflects an awareness that herbal compounds are complex, often containing multiple bioactive ingredients that can interact

unpredictably with the human body or with other medications. The term “susceptibility” acknowledges the inherent risks involved, ranging from contamination and adulteration to dosage inconsistencies and unknown interactions.

From a public health standpoint, this concern highlights a key dilemma: while TCM remains a vital and culturally legitimate healthcare resource, its unregulated use can lead to harmful outcomes. The HCP’s cautionary stance therefore embodies the ethical imperative of evidence-based practice, prioritising patient safety over unverified efficacy. Yet, this position simultaneously exposes a structural challenge: without sufficient research and regulatory oversight, TCM cannot easily transition from informal practice to formal healthcare integration.

HCP4’s reflections reveal a complex landscape in which parental trust in TCM coexists with professional scepticism regarding its safety and standardisation. The HCP’s views illuminate the broader socio-cultural dynamics that underpin healthcare decision-making in resource-limited contexts. On one hand, parents’ reliance on TCM is sustained by its affordability, accessibility, and resonance with cultural beliefs. On the other, HCPs remain cautious, emphasising the absence of quality assurance, regulatory frameworks, and clinical validation.

This juxtaposition reveals a paradox: TCM continues to thrive precisely because it fills the gaps left by the formal health system, yet its unregulated nature raises legitimate concerns about patient safety. The analysis suggests that achieving effective and culturally sensitive healthcare interventions, particularly in promoting NNHS requires an integrative approach that acknowledges cultural beliefs while enforcing scientific rigour. In essence, the reflections of **HCP4** advocate for a balanced model of healthcare that does not dismiss indigenous knowledge but rather seeks to harmonise it with contemporary medical standards, thereby ensuring that cultural respect and scientific integrity coexist in the pursuit of improved health outcomes.

4.4.3.4 Cultural Beliefs, Traditional Practices, and Biomedical Systems in NNHS

The intersection between cultural belief systems, traditional healing practices, and biomedical models of healthcare represents one of the most complex terrains in contemporary public health practice, particularly in developing contexts such as Port Harcourt, Nigeria. The narratives of HCPs in this study illuminate how these intersections profoundly influence parental decision-making, healthcare access, and the implementation of NNHS initiatives. Participants reveal that TCM continues to occupy a central role in community health behaviour, sustained by deep-seated cultural ideologies, economic necessity, and mistrust of biomedical interventions. At the same time, they expose significant structural and systemic deficiencies, such as inadequate facilities, workforce shortages, and low public awareness, that collectively

undermine effective service delivery. The following discussion develops two interrelated sub-themes that together capture this dual tension between belief systems and systemic constraints.

4.4.3.5 Cultural Beliefs, Public Perceptions, and TCM

Across the narratives, participants **HCP4**, **HCP5**, and **HCP3** underscore the persistent influence of TCM in shaping the health-seeking behaviour of families, particularly in relation to childhood and congenital hearing conditions. The accounts reveal a deep-rooted cultural reliance on herbal and indigenous healing systems, driven not only by affordability and accessibility but also by a perceived spiritual legitimacy and safety.

HCP5 articulates a central public misconception that:

“TCM is often promoted to the populace as being completely free devoid of toxicity because of its natural origin compared to orthodox medicine which they believed are made up of chemicals” (**HCP5**)

This assertion encapsulates a pervasive “naturalistic fallacy,” the mistaken assumption that naturally derived substances are inherently benign, while synthetic or “chemical” medicines are inherently harmful. The participant’s use of the term “promoted” suggests that such views are actively propagated through social, cultural, and even religious networks, reinforcing communal trust in traditional remedies. This misplaced confidence in the natural equating to the safe has critical implications for health outcomes, as it leads to both the overestimation of TCM’s benefits and the underestimation of its potential risks.

Participants collectively imply that this belief system does not exist in isolation; it is embedded in a wider epistemological framework in which healing is conceptualised holistically, combining spiritual, physical, and moral dimensions. Within such a worldview, the use of herbs or rituals is often interpreted as part of restoring cosmic or ancestral balance, rather than merely treating physiological symptoms. Consequently, many parents feel morally and culturally compelled to pursue these traditional routes, especially when confronted with childhood health challenges such as HL.

This cultural orientation is further elaborated by **HCP4**, who remarks that

“We have the self-acclaimed tradomedical doctors, whose practice are indigenous and passed on from generation to generation not that they have received specialised training as regards the use of herbs in the management of diseases” (**HCP4**)

Here, the HCP distinguishes between informal, experience-based knowledge and formalised medical education, highlighting the epistemic gap between indigenous and biomedical systems. The phrase “self-acclaimed” signals the lack of regulation or institutional oversight, while “indigenous” evokes the deep historical roots and cultural authority that sustain these practices. For **HCP4**, this intergenerational transmission of traditional medical knowledge has preserved local healing wisdom but has also perpetuated unstandardised and potentially unsafe therapeutic approaches.

HCP5 reinforces this critique by suggesting that:

“The traditional healers have impacted negatively on newborn or early childhood HL screening” (**HCP5**)

The statement implies that traditional practitioners, while respected in the community, inadvertently obstruct early detection and intervention by encouraging parents to rely on herbal or spiritual solutions rather than biomedical screening. This perception of negative impact underscores a recurring theme across participants: the tension between cultural trust in traditional healers and the biomedical imperative for timely intervention. The delay or avoidance of hospital-based screening, motivated by cultural loyalty or fear of medical “chemicals,” can result in irreversible consequences for a child’s speech and cognitive development.

The dichotomy between traditional and orthodox medicine is further illuminated in **HCP5**’s observation that:

“TCM though popularly practiced is quickly regarded as quackery by those who practice conventional or orthodox medicine” (**HCP5**)

The use of the term “quackery” signifies the deep scepticism, and sometimes outright dismissal, of traditional healing by biomedical practitioners. This reveals a polarised landscape where TCM, despite its social legitimacy, lacks scientific validation and institutional credibility. The tension between the two systems—traditional and orthodox—illustrates a broader epistemological divide: while TCM is anchored in communal trust, spiritual cosmology, and anecdotal efficacy, biomedical systems are grounded in standardised evidence, clinical trials, and measurable outcomes.

This polarity invites consideration of a potential middle ground. **HCP3** offers a culturally reflective insight into this divide by acknowledging that

“Nigeria is a multilingual and multi-culturally diverse country, so people in one region may feel like it is a curse from the gods so they want to consult traditionally. However, many cases that I’ve seen always ended up in medical treatment whereby they end up in a hospital and they have a better result from the hospital” (HCP3)

HCP3’s reflection reveals that while spiritual or cultural explanations for illness initially influence parents’ actions, empirical experience often realigns them with biomedical care once they witness the superior outcomes. This movement from cultural belief to biomedical acceptance suggests an evolving public consciousness that may be receptive to integrative health education strategies.

The participants collectively highlight that addressing HL in such a context requires a culturally sensitive approach, one that neither dismisses traditional knowledge nor uncritically endorses it. HCP2, for instance, reinforces the biomedical necessity of screening, asserting that “medical arrangement seems to be the option, the way forward... a lot of people have been seeking their different ways to solve this problem, that is why the problem keeps on elongating” (HCP2)

The metaphor of the “elongating problem” vividly conveys the consequences of relying on unverified traditional remedies, which prolong suffering and impede effective treatment.

This convergence of perspectives indicates a dual need: to respect indigenous health beliefs while simultaneously strengthening biomedical education and outreach. Without mutual understanding between the two systems, families remain caught between cultural obligation and clinical necessity. Effective hearing screening initiatives, therefore, must integrate culturally embedded education that reinterprets biomedical interventions within familiar worldviews, thereby encouraging early medical engagement without alienating traditional belief structures.

4.4.4 THEME FOUR (HCPs): Promoting Access

4.4.4.1 Systemic Barriers and Professional Limitations to Effective Hearing Screening

While cultural beliefs constitute one dimension of the challenge, participants unanimously emphasise the structural and systemic obstacles that impede the widespread adoption of NNHS in Nigeria. These challenges encompass infrastructural inadequacies, scarcity of trained personnel, low public awareness, financial hardship, and religious or social barriers, all of which collectively hinder early detection and intervention.

HCP1 provides a comprehensive overview of these multifaceted barriers, noting that:

“availability and awareness is one of the factors that could be a barrier” (**HCP1**)

This comment identifies two critical determinants of healthcare uptake: physical access to screening facilities and public awareness of their importance. The dual absence of these factors creates a self-reinforcing cycle in which services, even when available, remain underutilised due to lack of community engagement and information. The participant’s analysis implies that structural limitations (such as insufficient screening centres) are compounded by informational deficits, both of which must be addressed simultaneously through infrastructural development and targeted health education campaigns.

Religious ideology emerges as another significant barrier in **HCP1**’s reflections. The participant observes that

“Religion too can affect someone’s mind set causing a barrier for screening”
(**HCP1**)

This highlights the intersection of faith and health, where spiritual convictions sometimes dissuade individuals from seeking medical intervention. For many families, reliance on divine protection or spiritual healing supersedes the perceived need for medical screening. This underscores the necessity of health promotion strategies that engage faith-based leaders and incorporate culturally congruent messaging to reconcile religious devotion with preventive healthcare practices.

Equally revealing are **HCP1**’s observations concerning the pervasive stigma and misinformation surrounding HL:

“Some even feel that HL is communicable... people believe that HL is diabolic and not natural” (**HCP1**)

These comments expose the deep-rooted misconceptions that frame HL as either contagious or spiritually caused, reinforcing fear and social exclusion. Such stigma discourages open discussion and deters parents from seeking professional help. In this sense, public education must not only promote screening but also actively dismantle cultural taboos and superstitions that pathologise HL.

The issue of health-seeking behaviour is further elaborated by **HCP2**, who depicts a troubling pattern of parental indecision and misinformation:

“Even when they detect a HL problem instead of them going to the right quarters, the audiologists, they end up shoplifting, moving from one religious house to another, from one trade-medical quarters to another... at the end of the day they are confused, the child is being left on his own” (**HCP2**)

The metaphorical term “shoplifting” (**HCP2**) vividly portrays the erratic and fragmented manner in which individuals pursue multiple, often conflicting, treatment options. This pattern of “serial consultation” (**HCP2**) not only delays effective care but also deepens confusion as parents receive contradictory advice from unqualified practitioners. The resulting neglect, “the child is being left on his own” (**HCP2**), represents both a clinical and ethical failure in health system responsiveness.

HCP2 further underscores the critical role of awareness, stating that

“if they had done prompt intervention, they would have saved so many children that are now suffering from HI... awareness is one of the panaceas to reducing the number of people that have become hearing impaired” (**HCP2**)

The word “panacea” signifies the participant’s conviction that public education and awareness are not merely supplementary but foundational to effective prevention. The relationship between awareness and health outcomes is reciprocal: informed communities are more likely to demand and utilise services, while accessible services reinforce community confidence and knowledge.

However, awareness alone cannot compensate for infrastructural and human resource deficits. **HCP2**’s further reflections illustrate this systemic gap:

“We don’t have facilities that have this equipment for NNHS... technology has gone to a point where there are a lot of innovations, but we don’t have facilities that have this equipment” (**HCP2**)

This lament captures the structural inequities between technological advancement and local implementation. Despite global innovations in early hearing detection technologies, Nigerian facilities remain under-resourced and unequipped to deliver basic screening services. This absence creates a critical bottleneck, preventing early diagnosis and reinforcing reliance on alternative explanations and remedies.

Equally concerning is the shortage of trained professionals, as **HCP2** notes:

“The personnel, for example, the audiologist... they are very few, a handful even if you see one. What are the services provided for these personnel to work freely and effectively?” (**HCP2**)

The rhetorical question underlines two interrelated issues: quantitative scarcity and inadequate professional support. Even where audiologists exist, their work may be constrained by poor infrastructure, lack of institutional recognition, and minimal career support. These systemic deficiencies collectively weaken the sustainability of audiological services and deter the expansion of screening programmes.

In connecting infrastructure with public awareness, **HCP2** insightfully remarks that

“If there is a commitment to providing these facilities then there’ll also be awareness... because the facilities are not available that is even another reason why you can’t talk of awareness” (**HCP2**)

This observation captures a vital cause-and-effect relationship: without visible, functional services, awareness campaigns lack credibility and practical relevance. In this sense, the development of infrastructure is not merely logistical but symbolic—it signals governmental commitment and fosters public trust in biomedical systems.

HCP3 adds further nuance to these structural and attitudinal challenges by identifying multiple sociocultural barriers. The participant emphasises the influence of parental denial, stating that “one of the challenges is the belief system. They believe that their child could never have a condition like HL... therefore, they would not want to even try it” (**HCP3**)

Denial, in this context, is both psychological and cultural; it reflects the stigmatic association of disability with shame, misfortune, or spiritual retribution. This mindset prevents parents from acknowledging symptoms, leading to delays in screening and treatment.

A related obstacle identified by **HCP3** concerns mistrust of medical research:

“They feel their child could be used for studies or trial and not everyone is open to allowing their own children go for medical studies” (**HCP3**)

Such fears, grounded in historical experiences of exploitation or misinformation, exacerbate resistance to participation in screening initiatives. Building transparency and community engagement, therefore, becomes crucial in rebuilding trust between healthcare institutions and the public.

Religious conviction again surfaces as a barrier, with **HCP3** noting that

“Most people feel like once a child is born, the child is perfect, so for that reason they might not open up or go for any screening” (**HCP3**)

This sentiment illustrates how religious faith can unintentionally translate into medical fatalism, discouraging preventive action. Addressing such attitudes requires sensitive framing that situates medical care as a form of divine stewardship rather than a challenge to faith.

Finally, financial limitations remain a pervasive barrier. **HCP3** observes that

“Another could be financial constraint... they may see it as though you are trying to impose something on them” (**HCP3**)

This scepticism stems from both economic hardship and generational unfamiliarity with preventive healthcare. The participant’s conclusion, “everybody should go through it to prevent what is unknown” (**HCP3**), encapsulates the public health rationale for universal screening, underscoring the need for subsidised, accessible programmes.

HCP2 further expands on this by linking governmental neglect with the perpetuation of low awareness:

“Hearing screening is not common, is not really available in our locality... the government, in my own opinion, they are supposed to pay attention to all of this aspect because when these people become challenged, it is now a challenge to the community and by extension to the state and the country” (**HCP3**)

This analysis reframes HI as a societal issue with cascading economic and social costs. Failure to invest in early detection results in greater long-term burdens, including increased dependency and reduced productivity. Thus, the participant calls for government accountability and systemic reform to prioritise preventive care.

Taken together, the participants’ perspectives reveal an interconnected web of cultural, religious, infrastructural, and educational barriers that hinder the effective implementation of NNHS. While traditional beliefs and socioeconomic factors shape parental attitudes, systemic deficiencies within healthcare institutions perpetuate inaccessibility and underutilisation. The narratives suggest that sustainable improvement will require a holistic strategy—one that integrates culturally attuned public education, infrastructural investment, professional capacity-building, and policy advocacy.

The juxtaposition of the two sub-themes reveals that both cultural and systemic factors operate in a mutually reinforcing manner. Cultural trust in TCM persists partly because biomedical systems have failed to provide consistent, accessible, and affordable alternatives. Conversely, systemic inefficiencies are exacerbated by public scepticism and reliance on indigenous explanations. The participants' accounts collectively advocate for an integrative model of healthcare that bridges these divides, one that honours cultural heritage while enforcing scientific standards and promoting equitable access to early hearing intervention.

The narrations of **HCP1–HCP5** illuminate the complex ecology of beliefs, practices, and institutional gaps that define NNHS in Port Harcourt. Addressing these challenges demands not only infrastructural reform but also cultural dialogue and sustained community engagement. Only through such a multidimensional approach can NNHS evolve from a neglected service to a culturally grounded, publicly trusted, and scientifically robust component of Nigeria's public health system.

4.4.4.2 Early Detection and Structural Capacity for UNHS in Port Harcourt

The accounts of HCPs (**HCP1–HCP4**) reveal a deeply held recognition of the centrality of early detection in preventing and managing HI among newborns and young children. Their reflections collectively portray a progressive understanding of NNHS as both a clinical and social intervention that carries implications for the child's developmental trajectory, the family's wellbeing, and the broader functioning of the public health system in Port Harcourt. The narratives intertwine the clinical imperatives of timely diagnosis and intervention with the structural, legislative, and educational prerequisites required to institutionalise NNHS as a standard healthcare practice. The following discussion is organised around two interrelated sub-themes: the first examines participants' emphasis on early and continuous screening as a clinical priority, while the second explores their views on the policy, infrastructural, and educational strategies necessary to achieve effective implementation within a constrained healthcare system.

4.4.4.3 The Clinical Imperative for Early and Continuous Screening

Participants articulate a consistent and well-reasoned case for the early identification of HL, grounded in both medical rationale and developmental logic. **HCP1** begins this discussion by underscoring the indispensable role of screening as the first critical step in identifying and quantifying HL. The participant observes that

“There is a great need for NS for HL here in Port Harcourt. We go for screening; then the screening will help us to know the degree of the HL and what measures are to be taken” (**HCP1**)

This statement demonstrates an understanding that screening serves not merely as a diagnostic activity but as a structured gateway to a continuum of interventions. By referring to the “degree” (**HCPX**) of HL, **HCP1** acknowledges that HI exists along a spectrum, requiring interventions tailored to the severity of each case. The implication is that NNHS must be designed to provide precise data that can guide differentiated management strategies, thereby preventing long-term communication and learning deficits.

In a similar vein, **HCP4** highlights the essential nature of timing and early action. The participant notes,

“Early detection via the screening. Once the screening is done at an early stage, then it is possible to decipher whether or not a particular infant will be diagnosed of HI or not” (**HCP4**)

The emphasis on “early detection” reflects an awareness of the developmental window within which intervention can make the most profound difference. **HCP4**’s use of the term “decipher” suggests that screening is not a perfunctory exercise but a process of clinical interpretation that can reveal otherwise hidden impairments before they manifest as developmental delays. The participant’s understanding is consistent with global evidence that timely identification enables interventions that promote optimal speech, language, and cognitive outcomes. In this context, the participant portrays screening as both a preventive and diagnostic tool, representing the first line of defence in a child’s lifelong auditory and communicative development.

HCP3 reinforces this proactive orientation through an individualised and family-centred perspective. The participant asserts,

“I have decided that my child will go through the necessary screening at every time to ensure that whatever is going to be a problem has to be resolved as fast as possible” (**HCP3**).

This declaration demonstrates an internalisation of preventive health values, where continuous monitoring is seen as integral to responsible parenting. The phrase “at every time” denotes a commitment to periodic screening, acknowledging that a child’s auditory health is dynamic and must be assessed repeatedly as they grow. **HCP3**’s perspective also reveals an implicit belief in the curative power of early intervention, namely, that problems identified early can be effectively managed before causing irreversible developmental harm.

Additionally, **HCP3** situates this understanding within a broader recognition of changing community health priorities, remarking that

“Yes! I think so, though it have not been a practice but the illnesses and the outbreak of the illnesses so far, I think a child needs to go through comprehensive screening including NNHS, for proper functioning” (**HCP3**)

The mention of “illnesses and outbreaks” reflects an evolving public awareness that has emerged from recent health crises, which have sensitised communities to the importance of preventive medicine. The use of “comprehensive screening” signals an integrated approach to child health, one in which hearing screening is not an isolated or optional exercise but part of a holistic package of early-life assessments that safeguard multiple aspects of wellbeing.

HCP4 further reinforces the developmental rationale for early testing by linking it explicitly to clinical decision-making:

“If screening is done early enough, then it will help the clinicians to know which of the treatment options to exploit in an established case of hearing disorder” (**HCP4**).

Here, the term “exploit” denotes the strategic use of diagnostic information to tailor interventions, optimise outcomes, and allocate resources efficiently. The participant implies that early screening provides clinicians with a roadmap for individualised care, allowing them to choose among therapeutic options such as hearing aids, cochlear implants, or auditory-verbal therapy. This view aligns with a preventive model of care, where early information enables timely and proportionate action.

Together, these reflections reveal a consensus among participants that NNHS is indispensable for the early identification and management of HL. **HCP1**, **HCP3**, and **HCP4** converge on three essential points: first, screening should occur as early as possible to leverage developmental plasticity; second, it should be recurrent to capture late-onset or progressive impairments; and third, it should inform nuanced and evidence-based clinical decisions. Their perspectives collectively situate NHS within a developmental continuum, one that begins at birth, continues through childhood, and forms the foundation for effective communication, education, and social inclusion.

4.4.4.4 Policy, Educational, and Infrastructural Strategies for Effective Implementation

While the first sub-theme underscores the clinical logic of NNHS, the second highlights the structural and systemic transformations needed to make such screening routine, equitable,

and sustainable. The participants recognise that technical knowledge and clinical commitment alone cannot ensure success; rather, policy enactment, public education, facility readiness, and social equity must all work in synergy to operationalise screening across diverse communities.

HCP4 advocates strongly for legislative intervention as a means of institutionalising screening within the healthcare system. The participant asserts that

“There should be laws enacted that every child soon after birth must be screened whether or not the child has developed physical and/or clinical symptoms for HL before discharge from the hospital” (**HCP4**).

The proposed law reflects an understanding of screening as a universal right and an ethical obligation of the health system. The insistence on screening “whether or not” symptoms are visible underscores the principle that prevention should not depend on the presence of clinical signs. This perspective transforms screening from an optional medical service into a public health mandate that guarantees equal access to every newborn.

HCP1 complements this call for legislation with a detailed discussion of the prerequisites for effective implementation. The participant explains that

“This screening for newborn can be made compulsory just as certain compulsory measures are taken after delivery... Health service providers should also stress the importance of this exercise. They can only do this if they have the facilities available. So, if they create the awareness but the facilities are not available, the purpose will not be achieved... when the facilities are available and awareness is created, then the problem can be addressed” (**HCP1**).

This nuanced statement identifies a key operational dilemma: awareness campaigns and policy directives will be ineffective unless the necessary facilities, equipment, and trained personnel are in place. The participant’s reasoning exposes a common pitfall in public health implementation, creating demand without ensuring supply, and underscores that infrastructure and education must advance together.

Building on these perspectives, **HCP2** emphasises the role of the government and civil society in expanding access through decentralised screening infrastructure:

“The government and indeed other well-meaning individuals who have passion to help the environment, to help the society should as a matter of urgency set up screening centres with facilities that would help to detect this HL and the government should make it as mandatory as a matter of fact that every child, they can go to schools and all that should be screened” (**HCP2**).

The phrase “as a matter of urgency” reflects the perceived moral and developmental imperative of addressing HI promptly. By extending screening into schools, **HCP2** proposes a complementary safety net for children who may have been missed at birth, thereby broadening the reach of detection and reducing inequality in access to care.

Education, particularly during pregnancy, emerges as another central strategy in participants’ accounts. **HCP1** suggests integrating hearing screening information into antenatal education, stating that

“Just as pregnant women go for antenatal and they are given tips on how to live a healthy life during pregnancy, this too can also be included... that after delivery it is important that your child undergoes screening for HL” (**HCP1**).

Furthermore, the participant notes that:

“if awareness can be created not just after birth but during pregnancy, it can help to prepare the minds of parents, caregivers and help them see how important this is” (**HCP1**).

This anticipatory approach reframes hearing screening as a routine expectation of responsible parenthood. By initiating awareness during pregnancy, parents are psychologically prepared to consent to and support screening, reducing resistance that might stem from misinformation or cultural misconceptions.

The question of equity is also foregrounded in the narratives. **HCP4** reflects on the disparities in healthcare utilisation between social groups, observing that:

“While those who are enlighten, those who are educated may want to visit the HCPs for some medical interventions... well, for the elites, it is always a positive influence on their perceptions because already they are used to presenting themselves to the hospital when they have health issues” (**HCP4**).

This observation exposes a socio-economic divide wherein education and financial stability facilitate access to healthcare, while less privileged groups remain marginalised. For NNHS

to be genuinely universal, public health strategies must address these inequalities through targeted outreach, subsidised services, and culturally tailored communication.

HCP2 deepens this argument by connecting early detection to broader social outcomes, asserting that:

“It should be like an outreach program to detect people who have these problems so that it can be managed because as we have known, we have seen our community when it is not managed at an early stage and they become teenagers where they also have aspirations and dreams and they feel left out. Those same children that we will refuse to diagnose and give them proper treatment and rehabilitation becomes a nuisance to the community, to the society and that create bigger problem for us” (**HCP2**)

The participant links preventive healthcare to social stability, arguing that neglecting early intervention produces long-term social and economic costs. This perspective frames NNHS not merely as a medical necessity but as a moral and civic duty, a form of social investment that prevents future marginalisation and fosters inclusion.

Taken together, the views of **HCP1**, **HCP2**, and **HCP4** delineate a multidimensional roadmap for the institutionalisation of NNHS. Legislative enforcement provides authority and consistency; infrastructural readiness ensures functional delivery; antenatal education nurtures informed demand; and equity-focused outreach mitigates disparities in access. Each of these components reinforces the others, forming a coherent vision of a responsive and inclusive public health system capable of identifying and managing HL from the earliest possible stage of life.

The perspectives of the HCPs collectively construct a persuasive argument for embedding NNHS within the preventive health framework of Port Harcourt. Their insights converge on the understanding that early and repeated screening forms the foundation for effective intervention, while legislative backing, infrastructural investment, and community education are indispensable for its realisation. The participants' reflections demonstrate that early detection is not only a clinical necessity but also a social responsibility that demands collaborative action from policymakers, HCPs, and the wider community. By coupling clinical precision with policy innovation and equity-driven implementation, NNHS can move from aspiration to standard practice—safeguarding children's developmental potential and contributing to a healthier, more inclusive society.

Overall, the findings from HCPs provide critical insight into the complex ecosystem surrounding HL prevention and early intervention in Port Harcourt. Collectively, their perspectives affirm that early detection through NNHS is indispensable for improving communication, educational, and social outcomes among children. However, they also expose systemic inequities and sociocultural barriers that hinder effective implementation. The professionals recognise that sustainable progress requires more than clinical expertise, it demands infrastructural investment, legislative support, and the integration of culturally sensitive health education into existing maternal and child health frameworks.

Moreover, their reflections underscore the dual nature of HL as both a biomedical and social challenge. Economic constraints, religious influences, and cultural interpretations of illness interact to shape parental decisions, often delaying access to formal care. In response, the participants advocate for an inclusive, multidisciplinary approach that balances traditional knowledge with scientific rigour, ensuring safety, accessibility, and equity in healthcare delivery.

Ultimately, the narratives reveal a professional community that is both aware and constrained, aware of what is required to prevent and manage HL effectively yet constrained by systemic deficiencies and socio-economic realities. Addressing these gaps calls for coordinated efforts among policymakers, HCPs, educators, and community leaders to normalise NNHS as a public health priority. By fostering collaboration between biomedical systems and culturally embedded practices, Port Harcourt's healthcare system can move toward a more equitable and integrated model of hearing health, one that protects children's developmental potential while respecting the cultural contexts in which families make health decisions.

4.5 Parents Results

4.5.1 THEME ONE (Parents): Understanding and Community Perceptions

In this main theme, the participants spoke about their level of knowledge, cognisance, and comprehension regarding NHL which includes knowledge of the causes and signs, symptoms. It also includes an understanding of the significance of early detection and intervention. The degree of comprehension can significantly affect how the community responds to and accommodates newborns with HL.

4.5.1.1 Causes of NHL

In this sub-theme, one parent narrated her understanding of the causes of NHL. three sub-themes developed regarding what they believe to be NHL. Few participants were completely unaware of the term "NHL" and had no knowledge about the causes of it. For example, one

participant mentioned that the term is only common in the western world as shown in her quotation below:

“I know very little about it. I know it is common in the western world but not so common here. So because of that, I don’t really have much information” **(P1)**

After a brief explanation of the term “NHL” the same participant **(P1)** mentioned that the cause of HL maybe as a result of some diet of mothers during pregnancy as shown in the following quotation:

“My idea of it is quite shallow, like I said earlier maybe diet from the mom, maybe careless mistakes from doctors and nurses during delivery I think can also affect the ear” **(P1)**

The above quotation shows that, the participant, despite believing they had little knowledge they still held clear views on potential causes. Interesting they later added that issues within health care delivery itself was all too common in the region.

4.5.1.1.1 Accident-Related Causes

Individuals’ differing perspectives on the causes of HL are reflected in their interview responses. They emphasise a variety of factors that, in their opinion, may contribute to this condition. There is an interaction between knowledge, personal experience, and assumptions in these perspectives.

Participants **P13** states demonstrates awareness of the numerous causes of HL as stated below:

“HL can be caused by illness, accidents, excessive antibiotic use, putting sharp objects in the ear, and constant exposure to extremely loud sounds” **(P13)**

This participant describes a variety of medical, incidental, and behavioural factors that can contribute to HL, highlighting the complexity of the issue. Illness and extensive antibiotic use are the two most prominent medical causes. In certain instances, HL may be a symptom of a systemic disease or an adverse effect of certain treatments. By mentioning “illness” and “excessive antibiotic use,” **P13** implies that both conditions and medications have the potential to affect hearing negatively. She also implies that physical trauma can also result in HL. These instances suggest that accidental or self-inflicted physical injury or harm can affect the auditory system. Additionally, it demonstrates the significance of personal safety and caution in preserving hearing health.

Finally, the participant mentions “constant exposure to extremely loud sounds” This factor is primarily attributable to ambient or lifestyle choices, such as working in noisy environments or listening to loud music. This factor highlights the significance of environmental noise levels and the necessity of moderating sound exposure to prevent HL.

This participant illuminates how multiple causes interact to produce the problem of HL. The participant does not probe into the specifics of how each factor contributes to the condition, nor does it investigate the different degrees of HL that may result from each cause. In addition, **P13** does not address HL prevention, management, or treatment, leaving a gap in comprehending the comprehensive approach to addressing this health issue.

Participant **P5** demonstrates a combination of knowledge and conjecture regarding the causes of HL. They acknowledged their limited comprehension, but they were able to identify a number of plausible factors. These include birth defects (conditions present at birth), accidents, and the use of certain medications during pregnancy. **P5** stated,

“I may not have a complete comprehension of the causes, but I have seen individuals born with birth defects, including HL. Or perhaps as a result of an accident or the mother’s use of certain medications during pregnancy, etc.” (**P5**)

Even though their knowledge is limited, it indicates an openness to the prospect of multiple, potentially preventable causes of HL.

Participant **P6** identifies accidents and illness as additional potential causes of HL. In addition, they introduce a prevalent misconception regarding the potential effect of a pregnant mother’s diet on a newborn’s hearing. **P6** stated,

“Illnesses and accidents can contribute to HL. Then, for infants, I believe the mother’s diet during pregnancy may play a role” (**P6**)

The mention of diet suggests a degree of ambiguity and a potential knowledge deficit regarding the causes of congenital HL.

These responses demonstrate a range of perspectives regarding the causes of HL. They exhibit a combination of scientifically supported knowledge and personal assumptions. Some of the participant concepts align with medical knowledge, indicating a certain degree of awareness. However, some hypotheses suggest ignorance and misunderstandings.

4.5.1.1.2 Bewitchment, Religion and Evil Deeds

It is evident from the responses of the various participants that cultural, societal, and religious beliefs have a significant impact on the perception and treatment of health issues, specifically HL, in their communities. Participants' beliefs frequently attribute HL to supernatural causes, such as bewitchment, curses, or punishment for past transgressions. This influences the reluctance of communities to seek medical assistance or embrace scientific explanations for these health conditions.

Due to a belief that their ailments, such as HL, may have been caused by supernatural influences like bewitchment, Participant **P3** asserts that some individuals may not seek medical help or endure health screenings. This belief system views the illness as an external imposition and not as a medically treatable issue. **P3** stated, "It could be due to bewitchment or something else, which is why people do not submit to screening or seek medical assistance."

This response suggests that there is a cultural barrier to the adoption and utilisation of contemporary medical services. The perception that spiritual influences could cause medical conditions discourages health-seeking behaviours.

Participant **P11** reinforces the notion that HL and similar maladies are perceived as divine punishment for past misdeeds or evil as shown in the following quotation.

"In general, people in my community believe that it occurs as a result of evil being summoned upon someone, or perhaps as a result of past or evil deeds. Thus, it is a consequence of prior actions" (**P11**)

This participant's comment exemplifies a belief system that attributes unfavourable outcomes to supernatural forces or moral evaluations.

The concept of "evil being summoned upon someone" implies a belief in supernatural forces or external entities with the ability to damage individuals. It may refer to spiritual or religious practises that incorporate the concept of curses or hexes. The "summoned" evil may manifest as any number of calamities, although **P11** does not specify the nature of these misfortunes.

The notion that maladies may be the result of "past or evil deeds" implies a moral judgement or a type of karmic comprehension. According to this view, negative experiences or afflictions are not random but rather seen as retribution or consequences for past actions, particularly evil or morally incorrect ones.

P11's observation demonstrates a consequentialist viewpoint — "it is a consequence of prior actions' which reflects an innate belief in cause and effect in the ethical and moral sphere. This could influence the community's perception of those afflicted with these disorders, possibly resulting to stigmatisation.

In contrast, a critical examination of **P11**'s viewpoint reveals that it may lead to victim-blaming and discourage afflicted individuals from pursuing appropriate assistance or interventions. If a calamity is perceived as punishment for a past wrong, there may be less sympathy or support for the afflicted person. In addition, it may discourage efforts to scientifically comprehend and address the causes of such negative occurrences or afflictions, which could result in persistent community problems.

This reluctance is reiterated by Participant **P13**, who describes how diverse explanations for HL were developed in the past. These included attributing it to malevolent forces or "evil" as shown below:

"In the past, if a person had difficulty hearing, many things could be made up. If they believe it to be wicked, then the appropriate response will be different. They may also attribute the cause to something else" (**P13**)

This indicates that cultural and spiritual beliefs have long influenced the societal perception and comprehension of health conditions such as HL.

Participant **PF1** who is a father adds religious convictions to the intricate belief system that impedes medical interventions. **PF1** identifies religious beliefs as a significant barrier, implying that these conditions are frequently regarded as a curse or divine punishment. **PF1** stated,

"Secondly, is founded on religious convictions. Therefore, our religious beliefs can be an impediment to NS for HL because, as I previously stated, we may believe that HL is a divine punishment and, as such, we should embrace our fate" (**PF1**)

This statement illustrates the influence of religious beliefs on perceptions of health and disease and, as a result, healthcare-seeking behaviours. Several of the participants (**P2**, **P4**, **P12** and **PF2**) equally described the sense that this could result from a curse from a god.

This further emphasises the strong sense of personal responsibility and guilt that individuals may feel regarding their health conditions, making it difficult for them to embrace them as natural, biological phenomena that can be treated medically. A vivid picture of the societal stigma against acknowledging HL, describing it as a curse was portrayed by participant **P2**.

As previously stated, **P2** stated: “People view HL as a no-no; it is not supposed to occur; it is a curse.” This reinforces the deeply ingrained cultural stigmatisation of health issues such as HL and the substantial societal pressure to conceal such conditions.

Participant **P13** presents a stark depiction of the conflict between accepting HL as a health issue and perceiving it as a problem caused by the devil. The participant emphasise that the latter perspective frequently results in denial and the hope for a miraculous cure, as opposed to seeking professional medical care.

“Some individuals believe that HL is caused by the demon rather than ageing. Some people believe that once a problem in one’s religion has been accepted, it cannot be resolved. Therefore, rather than accepting that they have HL, they choose to live in denial and hope for a miracle” (**P13**)

The responses of the participants provide a powerful examination of the complex interaction between cultural, societal, and religious beliefs and their influence on the perception of health conditions, specifically HL. These are certainly aspects that need to be considered when discussing and educating on health care and may indicate that health messages need to move beyond medical centres to liaise with religious leaders for example.

4.5.1.1.3 Infection and Medical Causes

Two interviewees have an understanding of the causes of HL, as demonstrated here. Their perspectives are consistent with accepted medical knowledge, indicating a high level of awareness regarding the potential causes of this condition.

Participants **P8** identifies a variety of causes that are essentially accurate from a medical standpoint. Infection, a history of jaundice in the child, and the effect of specific treatments such as chemotherapy, which may require the use of antibiotics that are deleterious to the ears, are listed. **P8** stated that:

“As a result of an infection, a history of jaundice, or chemotherapy involving intravenous administration of antibiotics that may be toxic to the ears” (**P8**)

P8 demonstrates an understanding of some of the risk factors associated with childhood HL, such as specific medical interventions and conditions, in his comments.

The chief cause of HL, as identified by Participant **P9**, is damage to the inner ear or nerves, according to this participant. This damage is attributed to infections, specific medications,

trauma, exposure to excessive noise, and age-related factors. **P9**'s response demonstrates a thorough understanding of the potential causes of HL:

“Essentially, it is caused by inner ear or nerve injury, it is typically caused by infections, certain medications, trauma, exposure to excessively loud noise, and other age-related factors” (**P9**)

Analysing these responses, it is evident that the participants (except the HCPs) have narrated their knowledge of the causes of HL. They are aware that it can be caused by a variety of factors, including specific diseases, treatment adverse effects, injuries, and lifestyle choices such as noise exposure. Additionally, they recognise the impact of ageing on hearing health.

4.5.1.2 Identification of NHL

The interviews collected for this analysis provide extensive insight into the perceptions and comprehension of HL detection. Participants, including HCPs and others, emphasise repeatedly the significance of early and routine hearing examinations. The interviews shed light on the recognition of the roles of various stakeholders, including HCPs and parents or custodians, as well as the perceived value of technological advances in facilitating early detection and intervention.

However, despite the many different types of understanding held by parents many described the importance of screening. For example, Participant **P10** narrated the importance of routine medical examinations, especially for neonates, to detect signs of HL. Below the statement:

“Regular medical check-ups for symptoms of HL and when a child is born, they must be screened” (**P10**)

This echoes the sentiments of HCPs who advocate for early and routine screenings as an effective preventive measure. This is reiterated by Participant **P11**, who states, “They say that a stitch in time saves nine therefore, if screening is performed shortly after birth, any hearing disorder or problem can be detected early” Both **P10** and **P11**'s statements reinforce the general consensus regarding the significance of regular hearing examinations for early detection of HL.

Participants **P13** and **P6** explained the importance of screening tests in determining the severity of HL and the subsequent course of action. According to **P13**, “The first step is screening, which is another term for testing. The hearing test will reveal the severity of the HL and the necessary treatment.” **P6** affirmed this sentiment, stating: “I believe through screening; screening is one method for detecting HL.”

These comments highlight the usefulness of screenings as a diagnostic instrument and a guide for further intervention.

The importance of NNHS was also narrated by participant **P15** and provides a timeline for its implementation. Find below the quotation of the participant:

“Every infant should be screened for HL shortly after birth. As HCPs examine every part of the body at birth to determine its optimal efficacy, I believe that hearing should also be evaluated. So, two weeks after birth, a child should be examined. It should be examined beginning in infancy” (**P15**)

In addition to reiterating the participants’ consensus on the importance of early screening, this perspective provides a specific timeline to emphasise the urgency of this action. This could function as a guiding principle for NNHS policy and practise.

Participant **P1** emphasises the responsibility of HCPs to check for HIs in newborns was emphasised by Participant **P1**, stating that:

“I think it all boils down to medical attention just immediately after childbirth or as needed, it has to do with the health practitioners and whoever is in charge the doctors and nurses, I believe it is their fundamental responsibility to check if a child is hearing impaired.”

The above statement emphasises the importance of HCPs in the early detection and treatment of HL. It serves as a potent reminder that HCPs are at the forefront of these assessments, and that their work is essential for identifying and addressing potential HL problems.

Participant **PF2** quoted that: “We must be screened, and babies must be screened as soon as they are born.” The participant expresses a strong belief in the significance of proactive and timely HL detection.

PF2 seems to be emphasising the significance of early detection. The use of “must” conveys a sense of obligation or necessity. By recommending screening, **PF2** implies an understanding that early diagnosis is essential for effective treatment. This recognition originates from medical evidence indicating that early identification of HL in infants can significantly improve language development outcomes, supporting **PF2**’s claim for immediate assessment after birth. In addition to acknowledging the significance of early intervention, **PF2**’s remark can be interpreted as a call for a universal approach to NNHS. By asserting that “babies must be screened,” **PF2** is advocating for a comprehensive strategy in which every neonate is examined.

PF2's statement shows a demand for screening and not just limited to infants but encompasses a larger audience. This demonstrates an awareness that HL is a pervasive problem affecting people of all ages. The statement is consistent with a larger narrative of preventive healthcare. The insistence of **PF2** on assessing newborns immediately exemplifies an approach that prioritises early detection and prevention over reactive measures. This proactive perspective reflects an understanding that early intervention frequently results in improved health outcomes overall.

PF2's statement encapsulates a number of concepts: the critical need for early detection, the advocacy for a universal approach to NNHS, the pervasive nature of HL, and the significance of a preventative approach to healthcare. Each of these interpretations is supported by the quotation and provides a deeper understanding of **PF2**'s stance on this crucial health concern.

Some of these interviews demonstrate a consensus regarding the significance of early and routine examinations for detecting and treating HL. They emphasise the significance of the roles played by various stakeholders and the value of technological advances that facilitate early detection. Some of the perspectives presented here demonstrate the value of preventive healthcare, the significance of early intervention practises, and the importance of ongoing health education, access to health services, and advancements in medical technology. These insights provide policymakers, HCPs, and carers with essential information for developing and implementing strategies for the early detection and management of HL. In addition, they emphasise the need for broader discussions regarding the accessibility and efficacy of healthcare services, especially for infants and children.

4.5.1.2.1 Behavioural Changes

The analysis of these interviews reveals practicable methods for identifying potential HL in infants, in particular. Participant **P2** concentrates on behavioural changes and sound-induced reactions as key indicators of hearing abilities.

In the first statement, participant **P2** emphasises the significance of observing behavioural changes to detect potential HL. The participant stated:

“When I say behavioural modifications, absolutely everyone should be hearing. Therefore, when you gaze at a person and speak to them, or by observing how they react to sounds, you will know.”

This viewpoint highlights the importance of keen observation in everyday interactions, observing that variations in how individuals react to sound may indicate HI. The participant's

words disclose a straightforward, practical method for assessing a person's hearing abilities, obviating the need for a professional diagnosis in the earliest stages of detection.

In addition, the second statement by participant **P2** focuses on infants, who are incapable of explicitly expressing their experiences. The participant emphasises the importance of observing infants' responses to stimuli as a parent or carer as indicated in the following quote:

"Infants may not know, so anyone who is close to an infant should always be able to observe how the infant reacts to sounds when you speak; do they hear you and all that."

Given infants' incapacity to verbally communicate potential hearing problems, it falls to the parents or carers to observe and interpret their responses to sound. This again emphasises the significance of acute observation as a crucial aspect of early HL detection.

Both quotations illustrate a practical approach to the early detection of HL, based on the meticulous observation of behavioural changes and sound responses. This approach demonstrates the importance of close relatives and carers in monitoring and identifying potential HL, especially in neonates and other individuals unable to communicate their experiences. By recognising and responding to these signs promptly, carers may be able to facilitate punctual interventions, thereby enhancing the efficacy of treatment and enhancing the quality of life for those with HL.

4.5.1.2.2 Reaction to Noise

In this sub-theme, the participants of the interviews provide a multidimensional perspective on identifying the indicators of hearing loss in individuals. Changes in how people react to sounds, the volume of their voice, and their sensitivity to stimuli are highlighted as key indicators of potential hearing impairment by the participants.

Participant **P1** emphasised the lack of response to stimuli as a potential indicator of HL in infants. Participant **P1** states,

"My child tends to move if he or she does not react to noise."

In addition, Participant **P1** suggests a practicable method of observation:

"Let's say my child is sleeping and the phone rings; if he doesn't tilt or move on multiple occasions, I could begin to suspect something."

These findings highlight the necessity of monitoring infants' responsiveness to environmental sounds, as a lack of response may indicate HL.

Participant **P13** echoes the observations made by participant **P1**, narrating that people with HL frequently require noises to be louder and have a tendency to speak louder than usual. According to Participant **P13**, the individual cannot hear unless you shout or elevate the volume of your voice. This also affects the individual's speech, as he will be unable to determine when his voice is too loud, causing him to speak harsher than usual. This emphasises the significance of monitoring changes in hearing and speech as indicators of HL.

HL is manifested by a lack of reaction to spoken words and the need to exclaim when communicating with others as concluded by participant **P3** as shown below:

“Well, if the individual does not respond to spoken words...if the individual must yell to communicate with others.”

This perspective reaffirms the commonly held belief that deviations in normal speech and hearing patterns are significant warning signs for potential HL.

These interviews collectively emphasise the following signs of HL: increased speaking volume, decreased responsiveness to sounds, and the need for a louder volume to hear. They highlight the need for family members, carers, and medical professionals to remain vigilant in observing these symptoms, particularly in infants and those who cannot disclose their own experiences. Early detection of these symptoms can result in timely interventions, maximising the efficacy of HL treatments and enhancing the quality of life of those afflicted.

4.5.1.3 Knowledge and Understanding of HL

Communication, social connections, and overall quality of life can all be significantly impacted by the complicated condition known as hearing loss. Effective management and assistance depend on having a thorough understanding of the various aspects of hearing loss, including its causes, effects, and potential solutions. The interviews contribute to a thorough understanding of hearing loss by offering insightful information on various viewpoints. This sub-theme shows the narration of the participants regarding their understanding and knowledge of NHL.

Participant **P1** describes HL as the inability to hear and categorises those who are deaf as hearing impaired. They do, however, express scepticism over prospective treatments for newborns who are deaf. This brings to light the difficulties posed by congenital HL, when early

intervention is essential for providing the right kind of assistance and maximising residual hearing ability. Find the quotation below.

“Okay, a person who cannot hear is considered to have HL, if the child is deaf from the womb, I don’t know if there’s anything like that, and there is little or nothing we can do if he comes out deaf” **(P1)**

Another participant **(P11)** discusses HL, pointing out that it might happen later in life and cause hearing problems. This is consistent with the idea that HL can occur at any stage of life and can provide difficulties for those who experience it. The acknowledgement of these difficulties highlights the necessity of prompt support and intervention.

“What I know about HL is that it can happen, and there are some children who, after birth, cannot hear or they find it difficult to hear” **(P11)**

Narrating about her understanding of HL, Participant **P14** offers information on several forms of HL. They discuss mechanical HL, which arises from damage to the bones in the ear, as well as sensorineural HL, which is brought on by harm to the nerves that feed the ears as stated below:

“the nerves that supply the ears are damaged in sensory-neural HL, damage to the bones in the ear is the root cause of mechanical HL” **(P14)**

The complexity of the issue is further highlighted by this distinction, which illustrates the various mechanisms via which HL can develop.

Participant **P15** and **P2** refer to people who are both deaf and mute and relate HL with the loss of the ability to speak. Due to the fact that HL can impede the growth and learning of spoken language, they draw attention to the complex relationship between hearing and speech. It is crucial to understand that being deaf does not automatically equate to being mute because those who are deaf can communicate using sign language or other non-verbal means. However, the participants’ viewpoint reflects the widespread correlation between speech problems and HL.

“Well, from what I’ve learned about HL, it appears to be a widespread issue. We refer to a person as being “deaf and mute” when they are unable to talk as a result of HL” **(P15)** “Well, what I know about HL is that it’s a challenge that exists everywhere that has to do with people not being able to hear sometimes affects them and they become mute too, where we get the deaf and mute individual” **(P2)**

This describes HL as affecting “deaf and dumb” people, which is an example of the use of archaic vocabulary. It is important to stress that the phrase “deaf and dumb” **is** offensive and stigmatising. The phrase “deaf and mute” **or** “deaf” **is** more appropriate and courteous. It is vital to speak in a way that values inclusivity and upholds the worth of those who are deaf as narrated by the participants.

The emphasis on the value of early intervention and suitable therapy for HL, especially in young children was narrated by participant **P7** as shown below:

“If identified early and treated appropriately, it is a common disability that can be treated in children.”

The participant pointed out that if recognised early and the proper steps are followed for intervention, HL is a common childhood impairment that can be treated. The importance of early detection and intervention in reducing the effects of HL on children’s development is highlighted by this.

Participant **PF2** who is a father explained that people who have been diagnosed with HL can be divided into groups such as total, partial, or functional HL in light of their knowledge. The results of the diagnostic determine the precise classification, which then directs the best course of therapy.

“According to my head knowledge, the person has a total, partial, or functional HL, depending on the results of the diagnostic, the appropriate treatment will be administered” (**PF2**)

Another father (**PF3**) gave a thorough definition of HL in children clarifying that HL is the term used to describe a youngster who is completely or partially unable to hear or perceive noises due to injury to the inner ear or nerve that runs from the ear to the brain. This description underscores the significance of the anatomical components of hearing as well as the fact that varying degrees of HL can occur.

“HL is defined as “a child’s complete or partial inability to hear or perceive sounds as a result of damage to the inner ear or nerve from the ear to the brain” (**PF3**)

These qualitative interviews offer insightful information on the complex issues surrounding HL, including its causes, effects, and prospective treatments. Our understanding of HL is improved by the viewpoints of healthcare experts and people who have lived experiences that shed light on the condition’s many facets. The interviews provide information on the function of the ear

nerves and inner ear as well as the probable contribution of environmental, genetic, and situational factors to the emergence of HL. They also emphasise the negative effects of HL on people's capacity for perception and comprehension of sound, as well as the possible difficulties with speech and communication that might result from HL. The value of prompt action and appropriate care in reducing HL's negative effects, especially in young children was emphasised. In order to maximise residual hearing capacities and provide timely support, most participants suggested that early detection, diagnosis, and intervention are essential.

Some participants discussed the importance of using language with sensitivity and respect when referring to people who have HL. In order to promote dignity and equality, outdated and stigmatising words like "deaf and dumb" should be abandoned and inclusive language should be used. Overall, by encompassing many viewpoints and experiences, these participants in this sub-theme offered a thorough summary of HL and suggested supporting people with HL more effectively and work to create inclusive environments that encourage communication and participation for all by developing a greater awareness of the intricacies and implications of HL.

4.5.1.4 Perceptions and Attitude to NHL

In this sub-theme, the participants provide profound insights into how society perceives hearing loss and how it is treated.

The comments made by Participant **P1** further illustrate the misconceptions and prejudices associated with individuals with HL in society. They provide a more intimate, experiential account that complements the more clinical perspective of the HCPs. Participant **P1** describes how individuals view HL as "something that is not theirs," suggesting a sense of othering or dissociation.

"They see it like something that is not their portion as they say; something that is beyond their reach and most persons with HL they don't really view them as humans" (**P1**)

By perceiving HL as something unattainable, society creates a greater sense of distance and difference between itself and those with the condition. This sensation of separation is emphasised by the statement that "most individuals with HL are not viewed as human beings." **By** failing to recognise those with HL as completely human, society can distance itself from them and deny them the empathy, understanding, and rights that result from shared humanity.

Additionally, Participant **P1** illustrates the progression of societal responses to individuals with HL, beginning with pity and progressing to stigma. "Okay, Generally, I think some persons feel

pity at first sight, then later on they may show signs of stigma towards them like ha, don't come close to me like they are sick or something, so that's what I've noticed" (**P1**).

The phrase "pity at first sight" suggests an initial emotional reaction based on perceived suffering or adversity, reflecting an understanding of HL as a significant hardship. However, ultimately this pity gives way to stigma, which is characterised by attitudes of avoidance and perceived contagion - "don't come near me like they're sick or something." This sequence indicates a shift from compassion to dread and rejection, highlighting the fluctuating and unstable nature of societal attitudes towards HI.

Participant **P1** also narrates the resulting social consequences in greater detail. Participant **P1** asserts,

"so many persons see them as a disease they're carrying about so they may really don't want to have dealings with them, and even the one that do have dealings with them, they may try to outsmart them, because they feel like they cannot hear so I can do things behind their back and get away with it" (**P1**)

This demonstrates a profoundly ingrained perception of HL as a contagious or dangerous illness, which fuels fear, discrimination, and isolation. Moreover, the notion that people may exploit the perceived vulnerability of those with HL demonstrates a heinous breach of trust and decency, demonstrating how the stigma and misunderstanding surrounding HL can result in active harm.

Participant **P1** provided an in-depth look at the perceptions and treatment of individuals with HL in society, which are characterised by othering, fluctuating responses, and exploitation. She highlighted the critical need for advocacy and education to combat these harmful attitudes and behaviours and cultivate a society that supports and respects all individuals, regardless of their hearing abilities.

Participants **P11**, **P13**, and **P15** illuminate key aspects of the societal response and the influence of cultural beliefs on the attitudes towards HI through a variety of perspectives on HL. Participant **P11**'s remark exemplifies how society reacts to the unfamiliarity or rarity of HL:

"I would say they react negatively because it's not common, since it is not common many people don't even know of it" (**P11**)

This negativity is a barrier to comprehension and acceptance, as it stems from the fear or uncertainty surrounding unknown or uncommon conditions. This demonstrates that the unfamiliar is frequently encountered with scepticism or unease. Furthermore, the lack of

awareness, as implied by the phrase “many people don’t even know about it,” inhibits the development of empathy and understanding, resulting in negative responses to those with HL.

A pragmatic perspective on the lack of importance given to hearing health was provided by participant **P13**:

“Most people don’t really think it’s important unless they have trouble hearing. But people in my area don’t usually go to the hospital or health centre to check for HL” (**P13**)

This suggests a reactive approach to hearing health rather than a proactive one. Individuals only consider the importance of hearing health when it directly affects them, indicating a significant disparity in public health awareness and preventative measures. Additionally, the reluctance or indifference to seek medical advice for HL indicates a sense of complacency or denial that exacerbates the difficulties faced by those with HL.

For participant **P15**, she narrated the cultural perspective on HL, describing it as follows:

“Like I said before, people see HL as a No-No; it is not supposed to happen; it is a curse” (**P15**)

This statement emphasises the stigmatisation of HI, which is viewed not only as a medical condition but also as a social and moral aberration. The term “curse” connotes a preternatural attribution, implying that individuals with HL are being punished or enduring a form of divine retribution. These attitudes exacerbate the stigma and create a hostile environment for individuals with HL.

these participants (**P11**, **P13**, **P15**) illuminate the multifaceted societal perceptions of HL, which range from dread of the unfamiliar to complacency in health practises to stigmatisation based on cultural beliefs. They demonstrate the pervasive influence of social and cultural contexts on the understanding and treatment of HL, highlighting the need for increased education, awareness, and advocacy to reshape these narratives.

The analysis of the following participants expressions indicates that HL is perceived in a variety of ways, with varying degrees of acceptance and comprehension of the condition.

For example, Participant **P2** emphasises an extreme perspective in which HL is viewed.

“Forbidden, like bad. Like here, people see HL as something that’s not supposed to be, in fact, it is a curse” (**P2**)

This illustrates a superstitious or cultural belief system in which HL is a moral or spiritual issue in addition to a medical one. It is regarded as a violation of the natural order of things and is viewed in a negative light. The use of negative terms such as “forbidden” and “curse” emphasises the stigma and discrimination that people with HL face in this particular context.

On the opposite extreme of the spectrum, participant **P3** presents an opposing viewpoint. The participant states,

“I have no adverse view of people with HL, I for one, I think that it’s a normal thing or is a regular thing. I don’t know if anything can be done about it but it is a regular thing that occurs” (**P3**)

This perspective depicts HL as a common condition and demonstrates acceptance of the condition. However, “I don’t know if anything can be done about it” also implies a sense of resignation or fatalism, suggesting a possible lack of knowledge about potential treatments or interventions for HL.

Participant **P8**’s narrative offers a novel perspective on the perception of HL:

“Some see it as something that is not a disability but a trait. They also think it is a culture” (**P8**)

This perspective redefines HL as a characteristic or attribute comparable to hair or eye colour, rather than a medical condition or disability. This rephrasing could be an indication of acceptance or a means of bearing with the negative stigma. The term “culture” may be used to refer to the shared experiences, sign language, and communal bonds formed among persons with HL, recognising their identity beyond their disability.

The differing perspectives expressed by these participants illustrate how HL is interpreted differently based on individual comprehension, societal attitudes, and cultural beliefs which highlights the significance of inclusive dialogues and education to foster empathy and combat HL-related prejudice.

The participant **PF1** who is a father, stated that.

“Once someone may say this child may have issues or difficulties in hearing perhaps with speaking too, the usual response will be God forbid, not my child” (**PF1**)

This reveals an entrenched denial mechanism within the community. HL is regarded as such a negative condition that even the mere suggestion of it is met with strong resistance and dismissal, particularly when it involves one's own child. This may reflect a fear or misunderstanding of HL, demonstrating how social stigma can contribute to individual denial. It could also indicate the potential isolation and difficulties the community associates with HL, which they are adamant to shield their children from.

In the meantime, participant **PF2** stated,

“They see it as something that cannot happen to them and when they see those that are deaf, they tend to look down on them even taking advantage of them because they know that in some way, they are faulted. They also see them as less humans” (**PF2**)

This statement illuminates the dehumanisation of individuals with HL. He explains that HL is viewed as an impossibility by some, demonstrating the extent of denial in the community. However, an alarming level of stigma and discrimination appears to coexist with this denial. People with HL are perceived as “flawed” and “less human,” revealing a bias and lack of empathy. Individuals may take advantage of the perceived vulnerability of those with HL and engage in exploitative behaviour as a result.

In contrast to the other perspectives, participant **PF3** suggests that some individuals regard HL primarily as a health condition rather than something to be feared or stigmatised.

“When it comes to HL, people see it as a physical impairment” (**PF3**) However, this perspective may lack a nuanced understanding of HL, viewing it as solely a physical limitation and overlooking the emotional, social, and psychological aspects of living with this condition.

The participants reveal a complex, multidimensional perception of HL that is characterised by both negative and less negative conceptions. An overarching theme that emerges from the participants is the pervasive stigmatisation of HL, which manifests in multiple ways and perpetuates a cycle of isolation and miscommunication.

The participant **P1** also discusses this perception, relating how hearing-impaired individuals are regarded as subhuman, which exacerbates their sense of otherness. Individuals with HL may internalise this negative social perception, resulting in feelings of self-alienation and inferiority. The exploitation of hearing-impaired individuals, as evidenced by participant **P1** is

another important finding. This highlights a power dynamic in which HL is exploited, thereby increasing the vulnerability of these individuals.

Other issues brought to light by the interviews are societal ignorance and lack of awareness. According to participant **P11**, "...it is uncommon, and many people are unaware of it." This unfamiliarity can breed dread and misunderstanding, thereby preventing acceptance. Furthermore, participant **P13** indicates that, unless personally afflicted, many individuals do not view HL as an important issue.

On the other hand, a few interviewees have a somewhat less negative view of HL. Participant **P3**, for example, describes it as a "normal" occurrence, indicating acceptance or, at the very least, the absence of significant negative attitudes. **P8** suggests that some view HL as a trait rather than a disability, indicating an effort to view HL from a more normalised perspective. The general trajectory, however, remains negative. For instance, participant **PF2**'s statement that people often look down on those with HL and exploit them aligns with participant **P1**'s earlier assertions, demonstrating that stigma and discrimination are pervasive societal problems and not isolated incidents.

In these sub-themes, the participants provided a critique of societal perceptions of HL, highlighting the need to address the apparent stigma and misinformation surrounding the condition. Despite some less negative perspectives, the overarching theme is a societal misunderstanding of HL that leads to the marginalisation, exploitation, and dehumanisation of those with this condition.

4.5.1.4.1 HL as a Significant Problem

In this sub-theme, the participants narrated their general experiences regarding the how people view HL and confirmed that HL is a significant issue that needs to be addressed in Port Harcourt.

Based on their first-hand experience and observations, Participant **P11**, affirms that HL is a problem. She noted that she has witnessed and heard of numerous cases of this condition affecting both infants and adults. She appears to base her opinion on the issue's prevalence.

"Yes, HL is a problem, I think so. Because I've seen some persons and I've also heard of many children even adult who have that problem" (**P11**)

This provides insight into her perspective, though it would be fascinating to explore further their views on the impact of this issue on the quality of life of individuals and on society.

Participant **P12**, has a more compassionate attitude towards those with HL. She expresses the difficulty that deaf community confront in the contemporary world, particularly in Port Harcourt and Nigeria in general, by referencing personal experience with deaf community. Her response,

“Yes, I do because I know a lot of deaf people and it’s hard for them to live in the world we live in. So, yes, I think it’s a big issue in Port Harcourt and everywhere else in Nigeria” (**P12**)

Her response above demonstrates a deeper comprehension of the difficulties faced by those with HL. It is an indication of the societal obstacles and difficulties these individuals encounter, possibly as a result of a lack of accessibility and accommodation for their condition.

Additionally, She elucidates that HL is a significant issue because the afflicted individuals are similar to everyone else, except for their HI. “Okay, so I think it’s a big problem because these people are still people, they just have trouble hearing, most of the time, that’s the only thing wrong with them, so I think it’s a big problem” (**P12**)

The emphasis on the normalcy of individuals with HL apart from their HI appears to be a demand for greater social acceptance and tolerance.

Also, participant **P12** narrated on the difficulties those with HL confront, particularly as they age. This participant portrays a bleak picture of the future for those with HL, stating,

“When those with HL grow up, it’s hard for them to stay alive because they can’t get a job, and many people won’t even hire them because they can’t hear, Some of them can’t even go to school because some school systems don’t like them or because schools don’t have the facilities to train deaf people. So, yes, I think it is a big challenge for them” (**P12**)

This statement highlights the reality of discrimination against individuals with HL on the employment market, which may be the result of communication difficulties and prejudice. The participant extends this issue to education, highlighting the inadequacies of school systems in meeting the requirements of deaf students. Some institutions actively exclude them, while others lack the facilities and resources to provide an appropriate education. Through these insights, She draws attention to the systemic obstacles faced by individuals with HL, highlighting the gravity of their plight.

Using numerical data, however, participant **P13** emphasises the magnitude of the HL problem. She noted that the number of Port Harcourt residents with HL is substantial and has presumably increased exponentially over the past decade. The following quote indicates an alarming increase in the prevalence of HL:

“Of course, without a doubt, yes, one, because records of deaf people from a long time ago show that there are more than 10,000 deaf people in Port Harcourt, and those numbers were given many, many years ago, in 2012, so, it means that between 2012 and 2022, which is about 10 years, the number must have doubled, tripled, or even grown even more, so HL screenings are very important in Port Harcourt” (**P13**)

The concern expressed by **P13** highlights the significance of HL examinations for monitoring and managing the issue.

However, participant **P5** contends the magnitude of the problem based on their knowledge of a school in Port Harcourt for individuals with HL. Her statement, “Yes, I can say so, I know of their school in Port Harcourt town and their population is much, so I think HL is a problem” (**P5**)

This indicates that a significant number of people suffer from HL. By associating the high population of the school with the prevalence of the problem, participant **P5** uses this institution as a microcosm of the larger societal issue. It would be intriguing to delve deeper into the participant’s comprehension of the available resources for these individuals and their perceptions of societal attitudes towards HL.

In contrast, participant **PF1** who is a father approaches the topic from a more anecdotal standpoint. He acknowledged a paucity of statistical knowledge but emphasise that his personal interactions with individuals with HI validate the severity of the issue. His states,

“I may not know the statistics of those diagnosed with one hearing disorder or the other, but then I do see people, I do see children even adults who are hard of hearing, so it is a problem” (**PF1**)

The statement of participant **PF1** demonstrates the significance of subjective experience and personal observation in recognising and comprehending societal issues. It would be worthwhile to investigate how his interactions with individuals with HL have influenced their perspectives on this issue and what solutions they envision.

Critically speaking, it appears that both **P11** and **P12** view HL as a significant issue, although their perspectives are shaped by distinct experiences and empathic understanding. It would be instructive to delve deeper into these perspectives, examining potential solutions, the effects of societal structure on these issues, and how their experiences and perceptions on HL align with or differ from those of the larger society. The participants cast light on the multifaceted challenges associated with HL and emphasise the need for societal and institutional changes to alleviate these challenges.

Participant **P12** also narrated on the lived experiences and difficulties of those with HL, whereas participant **P13** emphasises the expanding magnitude of the problem and the need for widespread and regular screenings. Both perspectives emphasise the urgency of addressing this issue at both the individual and systemic levels. Participants **P5** and **PF1** corroborate the issue, indicating that it is pervasive in their environment. It functions as a reminder that experiences and personal encounters can be as influential as statistical data in recognising and comprehending societal issues.

4.5.1.4.2 Positive Views of HL

The presented quotations by the participants in this sub-theme reflects their perspectives on those with hearing loss and asserts their right to a normal existence, as well as their own advocacy roles in this context.

In contrast, **P1** classifies HI as a “disability.” By equating HL with “every other kind of disability,” **P1** suggests that it should be understood and addressed in the context of disability rights and inclusion.

“Well, ermm, HL is a disability; I see it as a disability and like every other kind of disability” (**P1**)

This viewpoint reflects the social model of disability, which views the difficulties encountered by disabled individuals as the result of societal barriers rather than individual shortcomings. This perspective holds society accountable for being inclusive and removing barriers, rather than “correcting” the disabled individual.

While both perspectives have the potential to improve the lives of people with HL, they also pose important concerns. The medical perspective may overemphasise individual care while minimising systemic factors that contribute to exclusion or discrimination. In contrast, the disability-centric perspective may unintentionally hinder the pursuit of medical or technological interventions that could enhance the quality of life for certain individuals. The challenge is to

strike a balance between both perspectives, addressing the medical aspects of HL while also striving for a more inclusive and tolerant society.

Participant **P1** also gave emotional responses and attitudes towards those with HL. **P1** expresses sentiments of pity, which is a recurring theme of empathy and compassion. **P1** also emphasises the lack of control these individuals have over their condition, implying a compassionate perspective.

“Okay, honestly, I feel pity for them at first sight, because I try to imagine what it’s like not hearing at all” (**P1**)

P1 expresses immediate feelings of pity upon confronting individuals with HL. They attempt empathy by envisioning what life would be like without hearing. This empathy, while rooted in compassion, may also indicate a tendency to presume those with HL have a diminished quality of life, which is not always the case. It is essential to recognise that while pity can inspire supportive actions, it may also contribute to a “helplessness” narrative surrounding HL, which can be disempowering.

P1 also mentions experiencing pity but clarifies that they do not stigmatise or dehumanise individuals with HL. She perceives them as “unfortunate humans,” which reinforces their empathetic stance.

“But there’s really no stigma from my end, okay, I don’t see those with HL as less human beings, I see them as unfortunate humans, Okay, most times the circumstances leading to their HL or condition or something else beyond their control, so you can’t really blame them, I always feel pity; I guess that’s just what I feel most times” (**P1**)

By acknowledging that the causes of HL are frequently beyond an individual’s control, **P1** rejects any notion of fault. This perspective appears to reflect an understanding of the randomness of disability and strengthens the sentiments of empathy. However, “unfortunate humans” could be criticised for its language. Even though it highlights **P1**’s empathy, it may perpetuate a victimhood narrative regarding HL. While **P1** does not stigmatise those with HL, the constant emphasis on empathy and misfortune may inadvertently contribute to a “us vs. them” dichotomy, thereby enhancing a sense of otherness.

HL is compared in **P11**’s narration to “any other disease” This comparison demonstrates that HL is acknowledged as part of the vast spectrum of human conditions.

“I see HL as eh... just like any other disease.it can happen to anybody. Some persons are born are given birth to without the ability to walk, some are blind, some could also be death” (P11)

According to **P11**, HL is merely another variation in the variety of human experiences, citing examples such as inability to walk and blindness. This perspective could be interpreted as an attempt to normalise HL, as **P11** emphasises that it “can happen to anybody.” **By** doing so, she highlighted the unpredictability and pervasiveness of such conditions, thereby challenging the stigma that is commonly associated with them. However,

For **P12**’s response, on the other hand, provides insight into the emotional response to individuals with HL. As with **P1**, **P12** expresses sorrowful emotions prompted by envisioning life without the ability to hear.

“Okay, to be honest, when I first see those with HL, I feel sorry for them because I try to imagine what it would be like to not be able to hear at all So, I guess that’s how I’ll feel, since I always feel sorry for them” (P12)

This statement demonstrates a high level of empathy, as **P12** attempts to place herself in the position of a person with HL. Nonetheless, similar to **P1**, this pity entered approach may perpetuate a sense of helplessness or victimhood in regard to HL. This is not to say that empathy is ineffective, but it is important to consider the potential repercussions of reducing individuals with HL to objects of pity.

Participant **P13** emphasise the normalcy of those with HL. The repeated assertion that they are “normal people” or “just like every other normal person” indicates a deliberate effort to avoid stereotyping or marginalising those with HL.

P13 describes the factual condition of individuals with HL, stating that they either cannot hear sounds or have severely impaired hearing, but promptly counterbalances this by emphasising their normalcy.

“They can’t hear sounds or their hearing is very bad, but they are normal people like you and me” (P13)

This reflects a comprehension of HL as a singular aspect of an individual’s identity that does not define them as a whole. The use of “like you and me” emphasises this sense of similarity, thereby preventing the alienation of individuals with HL.

Additionally, **P13** elaborates on this perspective by hesitating to designate individuals with HL as “normal” because this would imply that they are also “abnormal.” This reflection displays an awareness of the language surrounding disability and a desire to avoid stigmatising categorisations.

“They are just like every other normal person. I won’t say they are normal, because that would put them in a state between normal and abnormal, but they are just like every other normal person, they have the same skills we do, and the only difference is that they can’t hear” (**P13**)

The participant acknowledges that these individuals possess the “same skills that we do,” reiterating their earlier assertion of shared humanity and abilities despite the obvious difference in hearing ability.

Participant **P13** actually demonstrated determination to view individuals with HL as essentially identical to everyone else, except for their HL. It is a drive towards inclusiveness and non-discrimination, which is crucial in overcoming societal barriers and prejudices.

P15 explicitly challenges the misconception that HL is a “curse,” which may be rooted in cultural or societal beliefs.

“HL is not a curse the way most people think but it is something that can come up at any time in anybody’s life maybe due to medical challenge or due to some lifestyles” (**P15**)

P15 insisted that it is not a misfortune but could occur at any time due to medical problems or lifestyle choices. This interpretation places HL in a more scientific and less judgmental context, which can assist in dispelling harmful beliefs. In addition to emphasising the universality of the condition, **P15**’s assertion that it can occur to anyone may encourage greater empathy and understanding.

Also, **P15**’s view of hearing-impaired individuals as “normal humans by defining their sole distinction as the inability to process sounds.

“I see them as normal humans but not having the ability to process sounds, finish! There is nothing wrong with them” (**P15**)

P15 emphasises the specific characteristic of HL while preserving the essential humanity of those afflicted. The statement “there is nothing wrong with them” challenges any preconceived notions of inherent deficiency or inferiority associated with HL. This perspective is empowering

for individuals with HL because it rejects stigmatising attitudes and affirms their equality and value.

P15 demonstrated nuanced understanding of HL, which opposes detrimental misconceptions and promotes the dignity and normalcy of those affected. In addition to promoting normalcy, it is essential to acknowledge the unique needs and obstacles confronted by individuals with HL. Respecting their unique experiences and providing appropriate assistance are essential for an inclusive approach.

P6 expresses empathy for those with HL, indicating a sense of helplessness or a significant need for assistance associated with this condition.

“I feel they are helpless, or they need help, most times, I just feel pity for them whenever I see them” (**P6**)

The statement demonstrates a sympathetic emotional response, which may inspire supportive behaviour. However, this perspective risks promoting a narrative of dependence and helplessness regarding HL. It may inadvertently reinforce stereotypes of incapacity or victimhood, overshadowing the agency, resilience, and capabilities of those with HL.

P9 demonstrated an emotional desire to assist those with HL.

“Basically, I’m emotional toward those with HL, I want to help them where possible; lately I stated learning sign language so as to communicate effectively with them” (**P9**)

P9, unlike **P6**, demonstrates a proactive desire to support these individuals by acquiring sign language to effectively communicate with them. This approach reflects a more empowered form of assistance, with the goal of bridging the communication gap rather than solely expressing sympathy for their condition. By learning sign language, **P9** indirectly acknowledges and respects the cultural and linguistic aspects of the deaf community and hard-of-hearing community. Despite the fact that both **P6** and **P9** exhibit empathic responses towards individuals with HL, their expressions of empathy differ substantially. Through communication and mutual comprehension, **P9**’s approach fosters a more equal and empowering relationship than **P6**’s, which risks perpetuating a helpless narrative. The comparison highlights the necessity of combining empathy with actions that respect and enhance the autonomy of individuals with HL.

4.5.1.4.3 Punishment for Evil Deeds

In this sub-theme, much emphasis is placed on a common theme, namely the cultural or societal interpretation of HL as a divine punishment or curse. This viewpoint provides insights into local beliefs and their prospective implications for HL acceptance, treatment-seeking behaviour, and stigma.

P11 presents a personal interpretation, possibly influenced by cultural beliefs, in which HL is viewed as divine punishment.

“like I said before HL is being viewed as punishment from the gods. So you just accept it, so if the gods have decided to give me a child that is hard of hearing, I’ll just accept it. It could be because of my sins, so if I have accepted it there is no need to go for screening” (**P11**)

This perspective reflects the belief that physical or sensory impairments are consequences for moral or spiritual transgressions. The participant implies resignation and acceptance based on a perceived divine will. The belief that their HL may be the result of “sins” bolsters this spiritual perspective. In addition, it appears that this belief discourages **P11** from pursuing medical intervention, such as screening, which could have serious implications for early detection and intervention strategies.

P14 reflect comparable sentiments, indicating that these interpretations are prevalent in their region.

“So, in this part of the country, people think it’s a curse or a punishment for things they did wrong in the past, when it may just be a common thing that happened while they were still in the womb” (**P14**)

In addition to highlighting the common perception of HL as a “curse” or punishment for past transgressions, **P14** introduces a biological explanation by suggesting that it may have occurred in utero. These perspectives illustrate the interaction between cultural beliefs and medical knowledge in influencing perceptions and responses to disabilities such as HL. These perspectives demonstrate the powerful impact of cultural beliefs on the interpretation and response to HL. Respecting cultural perspectives is essential, but it is also essential to provide accurate information about HL in order to dispel detrimental myths and encourage early intervention and support. This analysis highlights the importance of context-specific and culturally sensitive approaches when addressing health-related issues such as HL.

4.5.1.4.4 Stigmatisation

The participant in this sub-theme narrates their perceptions of society's attitudes towards those with HL. The narration centre on two key concepts: the existence of stigma against the hearing-impaired and the dynamic transition of attitudes from sympathy to stigma.

According to participant **P1** who stated that;

“So, there is always this stigma towards those with hearing disabilities as far as I know” (**P1**)

This directly indicates the participant's belief that stigma against individuals with HIs persists. This assertion can be understood in a variety of ways. First, it demonstrates **P1**'s own observation and awareness of the discrimination and unjust treatment hearing impaired individuals face in society. It should be noted, however, that this observation is subjective, as the respondent is expressing their own comprehension. She used “as far as I know” to indicate that they are aware that their perspective may not be universally applicable. This also implies that the respondent is receptive to the possibility of additional experiences or perceptions.

Additionally, the participant elaborates on this stigma, stating,

“Okay, Generally, I think some persons feel pity at first sight, then later on they may show signs of stigma towards them like ha, don't come close to me like they are sick or something, so that's what I've noticed” (**P1**)

The quote depicts her emotive journey when interacting with someone with HL, from initial sympathy to later stigmatisation. The mention of initial pity suggests that the respondent recognises that people respond initially with empathy or sympathy. This may indicate an awareness of the difficulties faced by people with HIs, or it may indicate a social tendency to infantilise or patronise them.

However, the participant asserts that this attitude evolves over time, becoming increasingly stigmatising. The phrase “ha, don't come close to me like I'm ill or something” exemplifies the social distancing that can occur when individuals express discomfort, fear, or aversion. This response could be the result of an irrational fear of “catching” the disability or an entrenched social tendency to isolate what is deemed “different.” This insight suggests that **P1** is aware that stigma is not merely a static perception, but that it can evolve and manifest in increasingly harmful ways over time. It also suggests that society's interactions with individuals with HIs may be based on misconceptions and stereotypes rather than a true comprehension of their condition.

PF1 addresses two interrelated concepts: the fear of social stigmatisation associated with HL and its effect on parental acceptance and willingness to seek treatment in the following quote.

“chiefly because of the social stigmatisation that will follow, so even if a specialist or professional – an expert in that field says that this child may likely have issues or difficulties in hearing, the mom or the parents will out rightly refute such and may not present the child for HL screening” (**PF1**)

Initially, the participant expresses conviction that social stigmatisation is a direct result of a HL diagnosis, as evidenced by the phrase “primarily due to the social stigmatisation that will follow.” **This** assertion implies a societal bias against individuals with HI, and the dread of this bias has significant repercussions, especially for parents who may need to navigate this stigmatisation on behalf of their child. The respondent implies that the fear of stigmatisation may be sufficient to discourage parents from obtaining professional assistance for their child’s hearing problems.

The second portion of the quote delves deeply into the manifestations of this fear.

Despite an expert’s suggestion that their child may have a hearing problem, parents

“will categorically deny this and may not present the child for HL screening” This reveals a complex dynamic in which parents, out of dread of stigmatisation, may choose denial over acceptance. It indicates that the parents’ fear may be so overwhelming that they are prepared to disregard professional advice, thereby potentially jeopardising their child’s health and development.

This statement emphasises the imperative need to challenge and alter societal perceptions and stigmas regarding HL from a critical standpoint. This fear based response from parents is not only detrimental to the children, who may not receive the necessary early interventions and treatments, but also to the overall understanding and social acceptance of HL. This scenario illustrates a cycle in which the stigma’s existence leads to denial, which in turn perpetuates the stigma as fewer and fewer people are observed openly coping with HL. It is also essential to note that the parents’ response may not be solely the result of societal pressure but may also reflect their personal prejudices and misconceptions about HL. This requires a multifaceted strategy to combat both societal attitudes and individual prejudices.

4.5.2 THEME TWO (Parents): Contradictory and Complex Views

In this theme, the participants involved demonstrated a wide range of perspectives, thereby highlighting the complexities associated with comprehending the practise of screening

newborns for HI. It became apparent that there was a significant variation in the levels of comprehension among the participants. Several participants acknowledged their limited understanding of the screening's nature and procedures. The individuals in question shown a lack of familiarity with the employed methodologies or the mere concept of the existence of such screening. This finding presents a notable divergence among a subgroup of respondents who maintained the perspective that NS for HL is mostly observed in nations situated in the western hemisphere. This viewpoint suggests that the practise may not be as prevalent or generally embraced.

Notably, within the cohort of participants who possessed a higher level of knowledge, specifically HCPs, there existed a comprehensive understanding of the specific protocols entailed in NNHS. These experts possess the ability to offer a detailed explanation of the procedure and its significance. Nevertheless, despite their expertise, they openly acknowledged significant obstacles that hindered its widespread adoption. One of the obstacles identified was a noticeable deficiency of awareness within wider populations, as stated by the participants. Furthermore, the insufficiency of essential facilities was identified as a substantial obstacle to the broader implementation of these screenings. The prevailing attitude is that although professionals demonstrated a solid grasp of the technical aspects of the screening, practical obstacles hinder its wider implementation.

Below are the developing sub-themes.

4.5.2.1 General Understanding of NS for HL

This section presents the findings from participants' accounts regarding their understanding and awareness of NNHS for early detection of HL. The responses reveal varying levels of familiarity, ranging from minimal awareness to a more conceptual or partially informed understanding of the procedure and its benefits. Participants' narratives highlight a clear disparity between global health practices, particularly those prevalent in Western contexts, and the current realities within Port Harcourt and similar regions in Nigeria.

For many participants, the idea of NNHS was relatively unfamiliar, indicating a limited diffusion of information and practice within the local healthcare setting. This limited awareness is often linked to the broader structural and socioeconomic constraints affecting access to healthcare innovation. Some participants acknowledged having only indirect or intuitive knowledge of the concept, while others attempted to infer its meaning from the terminology itself. A recurrent theme within these accounts is the perceived regional and institutional inequality in healthcare service delivery, where advanced screening practices appear to be confined to private or better-resourced facilities, while general hospitals lag behind.

Participant **P1**'s statement indicates a limited understanding of the subject matter.

"I know very little about it. I know it is common in the western world but not so common here. So, because of that, I don't really have much information as to how it is done" (**P1**)

The participant also acknowledged that the prevalence of this practise is more widespread in Western societies compared to its relative rarity in this particular region. The participant's statement emphasises two significant factors, namely the lack of information and the resulting inability to comprehend the process. Initially, a perceived disparity exists between healthcare practises in the Western world and the location of the participant which is Port Harcourt. The reference to the limited knowledge regarding the technique serves to underscore the potential variability in the adoption and comprehension of NS. The lack of awareness or limited accessibility could impede the general adoption of potentially advantageous NS for HL.

Additionally, the concept of regional disparity is further emphasised by participant **P1**'s subsequent assertion,

"What I know for right now it hasn't really been mentioned to me, I know that it's common but not in this part of the world maybe in some private hospitals they can have that plan but for this general hospital it usually not like that" (**P1**)

This provides a more comprehensive analysis of the geographically limited nature of healthcare accessibility. The discrepancy between private hospitals and the mentioned general hospital implies a potential socioeconomic factor in terms of healthcare accessibility within the region. This suggests that while certain privileged or specialised sectors of the healthcare system may embrace more Western-oriented approaches, the wider public healthcare institutions may exhibit a slower pace of adoption.

The findings provided by participant **P1** demonstrate a multifaceted discrepancy in healthcare practise and knowledge. Although there is a widespread acknowledgement of certain procedures or practises being considered "common," the actual execution and availability of these practises appear to be dependent on various regional and local circumstances. The observed discrepancy has the potential to lead to disparate healthcare outcomes influenced by geographical location and socio-economic standing.

Other participants also shed light on the nuanced comprehension of health practises, with a specific focus on regional disparities and awareness, as highlighted by the viewpoints of participants **P12** and **P13**.

According to participant **P12**, there is a limited understanding of the subject matter.

“I don’t know much about it. I know it’s common in the West, but I’m not sure how common it is here. Because of this, I don’t really know much about how it’s done” (**P12**)

This sentiment conveys a dual concept. Initially, it is important to acknowledge a restricted personal understanding regarding a particular health practise. Nevertheless, the participant does not present this as a disinterest, but rather as a consequence of the practise being viewed as uncommon in Port Harcourt in contrast to its popularity in Western societies. This suggests that the level of familiarity with specific medical procedures may be significantly influenced by their regional prevalence or societal acceptance.

In agreement with this viewpoint, participant **P13** asserts that while personal observation is lacking, it is acknowledged that the feasibility of NS may be attainable in more advanced nations.

“I’ve never seen it done, but I know that screening for newborns may be possible in more developed countries. I haven’t heard of it being done where I live” (**P13**)

In this statement, **P13** not only acknowledges personal lack of experience with the technique but also highlights a potential correlation between the presence of the practise and a nation’s level of development. **P13** also implies a potential association between a country’s socioeconomic or developmental status and the healthcare practises it chooses to embrace or prioritise by classifying certain nations as “more developed.”

When considering both viewpoints collectively, it becomes apparent that the distribution of medical information and practises may not be uniformly widespread. However, it appears that these characteristics are closely interconnected with regional dynamics, encompassing cultural, economic, and developmental aspects. This observation may allude to wider issues with global health equity, wherein certain advantageous practises are confined to particular places, perhaps resulting in inadequate access to these practises in other areas.

Looking at the quotations of participants **P15** and **P3**, it is apparent that the participants exhibit a discernible level of familiarity with NS for HL. Although their knowledge may not be exhaustive, it is evident that they possess a rudimentary understanding, possibly derived from indirect sources or general awareness.

According to **P15**,

“I don’t really know much but however, there are people who that is their specialty in medicine. So, there are things they do like checking the hearing abilities of babies. So, I think there are specialised instruments they use to check if someone’s hearing ability is still active or distorted in any way, that’s all I know” **(P15)**

The participant expresses deference to medical professionals and recognises the presence of a distinct field of medicine focused on this area. Although the comprehension of **P15** may not be comprehensive, the inclusion of the term “specialised instruments” indicates an acknowledgment that the procedure is not basic and necessitates specific tools or equipment. The differentiation between a “active” and “distorted” auditory capacity also highlights an acknowledgment of the intricate results that the screening process may uncover.

In contrast, participant **P3** offers a concise summary in her assertion that:

“Screening for NHL is not a very familiar thing to me but I know that it is something they do to newborns to check if they have any hearing disability” **(P3)** This succinct statement provides a straightforward and vital perspective on the objective of the screening process, which is to ascertain the existence of a HI in infants. Despite acknowledging a limited level of familiarity, **P3** demonstrates an understanding of the fundamental goal of the procedure.

In addition to enhancing comprehension, **P3** further expounds on the topic by stating,

“I have not seen first-hand how the screening is done but I have heard that there is something like an earpiece placed on the ears, and they play a soft sound or clicks, and then the person responds according to the sound that is played, and it shows if the person can hear or not” **(P3)**

In this instance, **P3** exhibits a heightened level of comprehension by exploring the procedural components of the screening process. The use of the term “earpiece” and the utilisation of “soft sound or clicks” in the quotation demonstrates an understanding of the sensory aspects involved in NS for HL. Although the participant has not directly observed the technique, the account suggests that the screening process is participatory and assesses the newborn’s level of receptivity to aural stimuli.

These two participants demonstrate a continuum of comprehension. Although none of the participants assert to possess entire competence, their cumulative opinions provide insights into a specialised medical practise that employs specific instruments to evaluate the auditory

well-being of a newborn. The recognition of the procedure's significance, regardless of differing levels of familiarity, highlights the acknowledged relevance of early identification in promoting optimal health outcomes for newborns.

Further to this, participant **P6**'s statement also indicates a lack of prior exposure to NS for HL but attempting to deduce its nature by analysing the terminology used.

"I have not heard it before but from the meaning of the word I can say it is screening that is done on newborns to detect if there is loss of hearing" (**P6**)

This statement highlights the inherent intuitiveness associated with the concept of

'screening for HL,' suggesting that individuals may grasp its fundamental purpose of evaluating the presence of HI in infants, even in the absence of prior familiarity. The approach employed by **P6** effectively demonstrates how the lack of information can be mitigated by employing intuitive or logical reasoning techniques that rely on linguistic cues.

In contrast, participant **P7** provides a more complex comprehension.

"It is a procedure carried out soon after birth to check the baby's hearing. When HL is found early, the baby can get help for his/her speech development and without screening it will be very hard to tell if the baby has HL" (**P7**)

Participant **P7** not only recognises the procedural dimension but also highlights the crucial advantages associated with early diagnosis. The aforementioned screenings emphasise the cascading impact they can have, since early intervention has the potential to facilitate the advancement of speech development, hence promoting the overall cognitive and communicative progress of infants. **P7** underscores the importance of early detection of HL in babies by highlighting the potential challenges associated with identifying this condition without the use of screening methods.

The perspective of participant **P13** affirms.

"Yes, screening for HL is a test to find out if someone has HL or might have HL" (**P13**)

Although it may appear to be a straightforward reaffirmation, it holds significant importance as it corresponds with the viewpoints of the other participants, so highlighting a shared comprehension of the screening's objective.

4.5.2.2 Perceptions and Attitude to NS for HL

The participants in this theme provided valuable insights into the prevailing lack of interest in NNHS in Port Harcourt. This phenomenon is closely linked to the local cultural beliefs and attitudes.

Based on participant **P9**'s observation, it is asserted that the community in Port Harcourt exhibits a notable deficiency in terms of their interest or awareness regarding the screening of infants for HI. According to **P9**, t

“People especially in Port Harcourt show little or no concerns about NS for HL and that is what we need to change” (**P9**)

This phrase not only brings attention to the problem but also conveys a sense of immediacy. The second portion of the quotation, “and that is what we must change,” highlights a plea for proactive measures, accentuating the significance of reversing this dominant mindset in order to guarantee improved health results for infants in the area.

Building upon this line of reasoning, participant **P12** provides a more comprehensive analysis of the underlying factors contributing to this perceived lack of engagement.

“Okay, they might think that my child is not deaf, that my child can never be deaf, or that I’m not screening, so it comes down to what they think or believe about screening or what they think about it. So, I think that could also be a reason or a problem” (**P12**) This suggested that parents may exhibit a tendency towards denial or over confidence when it comes to their child’s health. According to the statement made by **P12**, there appears to be a noticeable expression of scepticism or resistance against the notion that their child could potentially have a health condition, as seen by the remark. The aforementioned phenomenon may arise due to cultural ideologies, individual predispositions, or a mere lack of comprehension of the frequency and characteristics of auditory impairments in infants.

Building upon **P12**'s assertion, it may be inferred that parents' choices are predominantly shaped by their subjective interpretations of the screening procedure. Individuals who perceive the process as superfluous or hold unfavourable associations with it may exhibit reluctance to undertake the aforementioned medical intervention. The statement made by **P12** in the later part of the quote highlights the central point of contention. The imperative of addressing these deeply entrenched ideas cannot be overstated in the context of enhancing the adoption of NNHSs within the community.

Participant **P9** and **P12** both highlighted the necessity of adopting a comprehensive approach in addressing the matter. The resolution of the issue at hand encompasses not only the implementation of medical establishments and enhanced availability of screenings, but also entails altering societal perspectives, debunking misconceptions, and enlightening the community on the significance and advantages of timely identification and intervention in matters pertaining to auditory impairments.

Participant **P4** stated that.

“My belief is to ensure that every child is weaned into a healthy state without any form of deformity be it HL or speech impediment, so it is important that every child undergoes this screening and I will like it if it is incorporated into our general assessment of children at birth or within the first two weeks of life so that we can cut down the population of people with HLes in the society” (**P4**)

The participant emphasises the significance of HL and speech impairments, underscoring their importance in the overall well-being of a child and the need for appropriate intervention.

The selection of the term “weaned” is notably intriguing. In general, the term “weaning” pertains to the gradual introduction of solid meals to an infant, in addition to the cessation of exclusive breastfeeding. In the present context, however, it appears to suggest a more comprehensive interpretation, one that spans the entirety of a child’s progression towards a condition of well-being and autonomy. The utilisation of this terminology by the participant can be interpreted as symbolic, signifying the progression a child undergoes from early childhood to a more advanced phase of development, and the crucial significance of health screenings in guaranteeing a seamless progression along this journey.

P4 expressed preference for the integration of the screening process and conveys a notable degree of immediacy. The objective is not alone to detect prospective health concerns, but rather to accomplish this at the earliest feasible stage. The underlying justification for this is readily evident, the prompt identification can result in prompt interventions, hence significantly enhancing outcomes for children who are impacted.

The concluding statement, which emphasises the goal of reducing the prevalence of HIs within society, provides a more expansive viewpoint. This pertains not only to individual children but also encompasses the broader community. By implementing early screenings and interventions, it is possible for society to decrease the general prevalence of HL, resulting in a more inclusive community where a reduced number of persons encounter the difficulties associated with such impairments.

In essence, the quotation offers a poignant viewpoint on the importance of early health screening of children, specifically in relation to auditory and linguistic abilities. This statement underscores the significance of these screenings in relation to personal welfare and the wider ramifications for society.

The next two participants (**P11** and **P13**) shed light on the attitudes and values of individuals towards the significance of hearing screenings for children, emphasising the importance of early detection and intervention.

Participant **P11** stated that.

“Well, I’m open-minded and very liberal so if I am advised to present my child for screening, who am I? I’ll present the child.”

This quote reveals a receptive attitude towards medical or expert advice. The self-description as “open-minded and very liberal” provides insight into **P11**’s worldview, which seems to be one of openness to new ideas and trusting the expertise of others. The rhetorical question “who am I?” demonstrates humility, suggesting that **P11** would not prioritise personal opinions over professional guidance when it comes to their child’s health.

However, the second statement from **P11**, takes on a different tone:

“Of course, I will screen my child for HL, because no sane person will be happy looking at a handicapped child. So, if screening will help detect early and appropriate or proper attention being given to prevent the condition from progressing, I will present my child.”

While the underlying sentiment of prioritising the child’s health remains, the phrasing “no sane person will be happy looking at a handicapped child” might be seen as insensitive and stigmatising to individuals with disabilities. This statement suggests that societal perceptions and the desire to conform to those perceptions may influence **P11**’s decision, even more than the intrinsic value of the child’s health. The latter part of the statement again underscores the emphasis on early detection and intervention, reinforcing the idea that **P11** values proactive healthcare.

Participant **P13** provides a more informed and introspective perspective:

“It’s important to me. I won’t think twice about giving my child a hearing test. I think that the fact that I knew about HL, its risks, and how to stop it could have

played a role. So, from my point of view, I think it's important, and I think my child should get a hearing test."

This participant directly attributes the conviction about the importance of screening to prior knowledge about HL and its implications. This suggests that awareness and education can significantly influence one's attitudes and decisions regarding health interventions. **P13's** repetition of "I think it's important" emphasizes a deeply held belief in the value of early screenings.

From these quotes, it is evident that personal values, societal perceptions, and informed knowledge play roles in shaping individuals' views on early hearing screenings. While both participants express a commitment to having their children screened, the motivations vary. **P11's** quotes, taken together, hint at a combination of trust in expert advice and societal pressures, while **P13's** statement reflects the impact of informed knowledge.

Participant **P14** offers valuable insights into the cognitive processes and underlying motivations of an individual with a strong affiliation to the medical domain, specifically pertaining to their perspective on the merits of early health screenings for neonates.

The participant's decisions regarding her child's healthcare are mostly influenced by her association with medicine, which is evident from the beginning. The participant expressed.

"As a person who works in medicine, I will put my own child through all of these tests and procedures. I would want to make sure that the baby can hear sounds and respond to spoken words when it is born. If a problem is found during this screening phase, the right steps will be taken to help the baby get better quickly. So that is what I would love to do because I don't want my child to have problems in the future that may be too expensive to deal with and manage"

(P14)

P14 expresses a desire to engage in a certain action, motivated by a concern for their child's future well-being and the potential financial burden associated with addressing any future difficulties.

The above quotation not only emphasises her conviction in the medical procedures, but also establishes a personal investment in it, so illustrating the alignment between her professional beliefs and personal choices.

Additionally, **P14** does not perceive these screenings as simple formality. **P14** perceives them as pivotal detection systems that facilitate prompt response. It is evident that the purpose is to

employ screenings as a proactive approach to prevent potential problems from escalating. The adoption of this proactive strategy is motivated by a concern for ensuring the child's well-being in terms of both physical health and potential financial consequences.

The last part of the quotation introduces an additional dimension to the discourse, namely, the possible economic ramifications associated with unaddressed or delayed identification of medical conditions. The provided quotation demonstrates the integration of emotional considerations, such as the child's welfare, with concrete and practical considerations, such as financial expenses, within the context of **P14**. This demonstrates that her support for early screenings extends beyond the realm of health, encompassing the prevention of potential financial hardships resulting from delayed medical care.

The perspective of Participant **P14** demonstrates a combination of professional experience and parental worries. The rationale behind early screenings is rooted in medical expertise, but the reasons for pursuing them go beyond purely clinical considerations. Parents also take into account the overall welfare of their child and the potential long-term financial consequences. The amalgamation of professional and personal elements, encompassing emotional and practical aspects, renders her perspective multifaceted and indicative of the intricacies inherent in making healthrelated choices for individuals close to one's heart.

Participants **P15** and **P3** shed light on the significance of early NS for neonates, albeit from two diverse perspectives.

The perspective offered by **P15** is intriguing due to its unique vantage point, which combines an external observer's standpoint with a high level of expertise.

“I don't have a child yet but since I work in the health sector, I always encourage my patients or my clients to always screen their children two weeks after birth; in three months' time and then in one year time” (**P15**)

Despite the participant's disclaimer of not having a child yet, her occupation in the healthcare industry bestows upon her a level of knowledge and authority. The significance of their commitment to a methodical approach to health screening becomes apparent in their statement. **P15** expresses support for the implementation of a standardised timeframe for screenings, highlighting their belief in the systemic significance of regular check-ups for the timely identification of potential health concerns. The guidance is based on a preventative strategy, emphasising the importance of regular early screenings in order to safeguard the child's well-being.

In contrast, participant **P3** adopts a paternal perspective, however, exhibits a proactive mindset that is congruent with the strategy advocated by **P15**.

“I have no issues screening my child; in fact, I will like to do a thorough screening to see that we do not have any problems in the future” (**P3**)

P3's assertion that she possesses no reservations regarding the screening of their child indicates a willingness to actively engage in medical procedures in order to promote the health and welfare of their children. The proactive nature of **P3**'s approach is emphasised by her last statement which is similar to the viewpoint expressed by **P15**. **P3** also acknowledges the significance of early and thorough screening as a proactive approach, guaranteeing a future for the child that is free from health obstacles.

Participant **P15** and **P3** demonstrated significant emphasis on the crucial nature of early screenings for NHL. While the attitude of **P15** tends to support a methodical methodology based on professional expertise, the perspective of **P3** is more subjective, motivated by a parental instinct to safeguard the welfare of their children. Both perspectives, despite stemming from distinct motivations, share a common belief that early diagnosis is crucial for prevention. It is noteworthy that both participants recognise the significance of proactively treating any health concerns, not just for current welfare but also to mitigate future consequences. The alignment of personal and professional perspectives towards a shared preventive strategy serves to strengthen the notion that early screening for HL is not solely a medical suggestion, but rather a widely acknowledged advantageous measure for the enduring well-being of children.

The following two quotations by participant **P10** provide an in-depth analysis of the difficulties encountered in the in NS, with a particular emphasis on the dearth of information and infrastructure in this field.

In the initial assertion, **P10** highlights the prevalent reluctance and unease experienced by individuals in relation to health examinations.

“They are less interested because of lack of knowledge; because of no awareness, they are even scared of going for such screening. So, it is a big problem in this area” (**P10**)

This quotation succinctly captures three interrelated challenges: a dearth of interest stemming from a lack of information, compounded by a complete absence of awareness. The presence of fear, as emphasised by the statement “they are even scared,” suggests that the unfamiliarity

of a situation acts as a deterrent for a significant number of individuals, dissuading them from pursuing screening that could potentially save their lives. The apprehension is ascribed to a lack of knowledge, implying that the provision of education and the implementation of outreach initiatives are crucial in effectively resolving these obstacles.

Participant **P10** also introduces an additional aspect to the discourse, namely that of infrastructure. The introductory remark briefly addresses the concerns faced by society, while the subsequent quote explains structural issues that contribute to these challenges.

“As medical personnel, I know the importance of screening my child for HL. But because of lack of facilities, we cannot screen as much as we should” (**P10**) Participant 10, who identifies as a medical professional, emphasises their intrinsic comprehension of the significance of screenings, particularly in relation to disorders such as HL. The quotation highlights the harsh truth that, despite the presence of knowledge and willingness, the implementation of essential health interventions can still be impeded by practical constraints, such as insufficient infrastructure.

Both assertions by **P10** makes it apparent that the issues in the healthcare sector, specifically in the context of screenings, are complex and have multiple dimensions. One aspect to consider is the task of educating a possibly uneducated populace, addressing and rectifying their concerns and misunderstandings around NSs. The situation necessitates the implementation of focused educational initiatives and awareness campaigns in order to overcome the obstacles posed by fear and lack of knowledge. However, it is worth noting that individuals may encounter obstacles in their pursuit of screenings, such as structural barriers like inadequate availability of facilities, which can impede their endeavours. This underscores the imperative for comprehensive healthcare solutions that encompass not just the psychological disposition of individuals but also the deficiencies in infrastructure.

Additionally, the origin of both statements by **P10** highlights its inclusive viewpoint, acknowledging both societal and systemic obstacles. This underscores the extensive nature of the difficulties being addressed.

Another parent (**P12**) demonstrated a firm belief in the universality of certain health concerns and the importance of doing early health checks for children.

The first statement by **P12** emphasis on the inherent unpredictability of health difficulties that neonates may encounter.

“Because anyone can have a child who is deaf from birth, no matter how much money they have or how healthy they are. It can happen to anyone. So, knowing that it can happen to anyone, I will do the right thing, take my chances, and go for screening as soon as my child is born to see if there is anything I can do to help or make the situation better” (P12)

The statement posits that individuals, regardless of their socioeconomic status or overall health, have the potential to conceive a child that has congenital deafness. The statement emphasises the unpredictable nature in which congenital diseases, such as deafness, may occur in individuals. **P12** highlights that socio-economic position and parental health do not serve as deterrents. The utilisation of the phrase “it can happen to anyone” serves to enhance the perception of the widespread vulnerability to these health conditions. The quote demonstrates that **P12**’s decision-making is influenced by this comprehension. The proactive approach demonstrated by **P12** highlights their dedication to implementing preventative steps in order to optimise the child’s outcome, even if it is solely to verify the child’s welfare.

The second comment made by participant **P12** serves to further support their conviction on the indispensability of NSs, but from a more comprehensive societal standpoint.

“Yes! Everyone who is a parent. No one should think that it’s not my share or that kind of thing. Every parent should let their child be checked out” (P12)

P12 ardently asserts that universal involvement in NSs is vital for all individuals who are parents, emphasising the importance of proactive engagement in this matter. It also underscores the prevailing fallacies or dismissive dispositions that individuals may possess, erroneously supposing that specific health adversities are incapable of afflicting them. The statement made by **P12**, emphasising that it is imperative for every parent to allow their child to have a medical examination, reflects their adherence to the concept of collective responsibility. **P12** firmly believes that all parents should place utmost importance on the well-being of their children, regardless of individual beliefs or misconceptions.

In these two quotations of **P12**, it can be deduced that the perspective of **P12** is based on a combination of individual comprehension and a wider societal obligation. **P12** places significant emphasis on the proactive approach to addressing health concerns, acknowledging its universal nature. This approach is seen crucial for both individuals and collectives. The prioritisation of screenings highlights the conviction in early intervention as a strategy to potentially modify or enhance health trajectories.

Also in this theme, Participant **P5** and **P6** offer valuable insights into the intricate factors influencing parental decision-making around health and NS for their children. The difficulties involve a range of elements, including individuals' personal values, economic considerations, perceived risks, and levels of trust in healthcare experts.

P5 asserts that.

“Well, I don’t think my child will have that kind of thing because I was not born with it and so my child cannot be born with it but if there is a screening for it and it is free, I will do it; I will allow my child to go through it especially if there is no pains attached” (**P5**)

This perspective exemplifies a prevalent fallacy, when it is assumed that the nonexistence of a particular condition in a parent guarantees its nonexistence in the offspring. The aetiology of congenital disorders is influenced by a complex interplay of genetic and environmental factors. It is important to note that **P5**'s belief may not be supported by empirical evidence. Nevertheless, **P5** demonstrates a degree of adaptability in their viewpoint and also introduces the economic aspect in the later part of the quote. The selection of a screening procedure is dependent on its cost-effectiveness, highlighting the significant influence of economic factors on healthcare decision-making for a substantial portion of the population. Finally, the statement made by **P5**, also highlights the significance of perceived risk. **P5** is more likely to engage in screenings if they perceive low physical discomfort for their child, indicating that the decision-making process prioritises the child's well-being and comfort.

The statement made by **P6** centres on the significance of trust in medical practitioners and the provision of high-quality healthcare.

“If the personnel involved are well trained and they know their job, I think I would want my child to be screened” (**P6**)

The prioritisation of healthcare worker competency is seen in **P6**'s statement, when they express a desire for their child to undergo screening if the individuals involved possess adequate training and expertise. This feeling elucidates that certain individuals' inclination to participate in the healthcare system, particularly in relation to their children, is contingent upon their trust in the healthcare experts responsible for providing the care. The establishment of confidence is of utmost importance for **P6**, indicating that the quality of healthcare provision is equally, if not more, significant than the screening process.

For **P5** and **P6**, it becomes evident that there are various factors that influence parental decision-making about NSs. In **P5**, the variables encompass a combination of personal beliefs, economic factors, and perceived hazards, whereas in

P6, the primary factor is the importance placed on faith in medical professionals. These observations exemplify the many factors that impact healthcare decision-making. The statement underscores the need of not only medical intervention, but also education, economic accessibility, reassurances regarding safety, and the maintenance of high standards of professional training. These factors are crucial in fostering trust and promoting more involvement in early health screenings.

Based on the participants narration in this theme, it is apparent that participants attach significant importance to NS for HL. However, their perspectives on this matter exhibit complicated concerns and apprehensions. The prevailing viewpoint acknowledges the widespread occurrence of specific health issues, underscoring that no child is intrinsically immune due to their ancestry or socioeconomic circumstances. Nevertheless, inherent in this comprehension are individual convictions, misunderstandings, financial obstacles, perceived hazards, and reliance on HCPs. Certain participants expressed a proactive stance, emphasising the utmost significance of early identification and intervention. Conversely, others demonstrated a readiness to undergo screenings contingent upon considerations such as financial implications, discomfort, or confidence in the medical expertise. The interviews conducted collectively in this theme highlight the intricate nature of decision-making processes around NS for HL. They emphasise the significant impact that accessibility, education, and trust have on shaping these decisions.

4.5.2.3 Effects of NS on a Child

In this sub-theme, the participants narrated their understanding regarding the positive or negative effects of NS for HL. For example, participant **P1** offered a multifaceted understanding of her perspectives and anxieties surrounding the practise of NSs, with a specific focus on the detection of HL.

Commencing with the declaration that

“I feel that screening my child for HL has no negative effect” (**P1**)

In this statement, **P1** exhibits a fundamental level of confidence in the efficacy and reliability of medical screening procedures. The establishment of trust in medical processes can be attributed to various factors, including pre-existing knowledge, personal experiences, and a

general sense of confidence. The explicitness of the assertion underscores the conviction of **P1** that the procedure, when executed accurately, is inherently secure and advantageous.

The assurance of the safety of the treatment is further strengthened as **P1** articulates,

“If it’s done rightly, if it’s done cautiously and carefully, it won’t affect my child negatively aside from the obvious positive aspect that I will know that he is not deaf from birth” (**P1**)

In this statement, **P1** establishes a connection between the safety of the method and its appropriate implementation, indicating a willingness to consider the screening process as long as it aligns with established guidelines and protocols. Furthermore, **P1** admits a distinct favourable consequence, namely the sense of security derived from being aware of their child’s auditory condition since infancy. This statement highlights **P1**’s comprehension of the dual function of the screening process, which involves both safeguarding the child’s welfare and offering reassurance to the parent.

However, a discernible shift in tone and perspective becomes apparent in the third statement, as **P1** expresses certain misgivings regarding the execution of the task.

“If only it is not done correctly. I don’t really know the details of the screening. I don’t know if it involves you know touching like the ears and all of that. So, if it requires something that is a bit physical, it might harm my child if it is not done carefully” (**P1**)

The acknowledgment made by **P1** on the lack of knowledge regarding the intricacies of the screening procedure reveals a level of ambiguity. The participant subtly alludes to possible reservations regarding the tangible components of the examination, suggesting that their confidence in the process is not unconditional but rather dependent on its execution. This statement posits the notion that although **P1** recognises the merits of screening, they also realise the possible hazards that may arise if it is not implemented cautiously.

These comments made by **P1** demonstrate a nuanced perspective that encompasses both a reliance on medical practises and a genuine parental care for the well-being of their child. **P1**’s perspective on the advantages of NS for HL is tempered by a sophisticated understanding, which is shaped by the perceived credibility of the screening process. The remarks emphasise the significance of clear and open communication between HCPs and parents, guaranteeing that medical treatments are not only performed safely but also thoroughly elucidated, so alleviating any potential anxieties and ambiguities.

The statements made by participant **PF4** provide insight into their viewpoint on the subject of NSs for HL, with a particular focus on highlighting the perceived advantages and the wider framework of health assessments for infants. **PF4** asserts a definitive position on the matter by stating that.

“NS for HL will affect the child positively and not in a negative way” (**PF4**)

This remark demonstrates a fundamental conviction in the advantages of identifying and addressing issues at an early stage. **PF4** argues that there is a distinct demarcation between positive and negative consequences, implying that they believe screenings to be not only innocuous but even advantageous. The implication being made is that the timely identification of any auditory impairments can result in prompt therapies, so enhancing the child’s long-term prospects.

Expanding further on the contextual aspects of healthcare pertaining to neonates, **PF4** asserts,

“Of course. When someone goes to the hospital or after delivery, a child is screened for so many things. So why should hearing screening be different? A child should also be screened for it” (**PF4**)

This statement establishes a foundation for a more comprehensive comprehension of medical procedures following childbirth. The inclusion of **PF4** situates the hearing screening within the broader range of customary assessments conducted on newborns, suggesting a particular level of care that is anticipated or required. By posing a hypothetical question, **PF4** addresses the potential biases or oversights that may be present in relation to hearing screenings when compared to other health assessments. This statement underscores the notion that **PF4** not only perceives the hearing screening as equally significant but also promotes its standardisation within the realm of postnatal care.

Looking at the participant **PF4**’s quotation, it can be inferred that **PF4** has the perception that health checks, including those specifically for hearing, are integral aspects of comprehensive infant care. The individual’s viewpoint exhibits a strong inclination towards the proactive detection and effective management of prospective health concerns. The focus placed by **PF4** on the regular and systematic nature of numerous examinations for newborns suggests a strong support for holistic healthcare, emphasising the need of not overlooking any component, including hearing. This highlights the relevance of adopting holistic healthcare approaches and the necessity of addressing all potential health issues in a comprehensive and equitable manner.

In contrast, **P15** presents a statement that is situated inside a personal framework.

“Since I have not given birth, I won’t answer directly but let’s say screening for HL will help every child after childbirth” (**P15**)

In this instance, **P15** acknowledges a dearth of personal experience pertaining to the process of birthing, potentially suggesting a degree of detachment or hesitancy in making unequivocal assertions. Nevertheless, notwithstanding this initial reluctance, **P15** proceeds to affirm a broad favourable consequence of the screening, suggesting its widespread relevance and advantage. This implies that the perceived value of hearing examinations for newborns is widely acknowledged and regarded to be advantageous, even in the absence of firsthand experience.

While the above participants have given positive responses to the effects of NS for HL, one participant (**PF5**) provides insight into the sociocultural ramifications associated with NSs for HL, highlighting the significance of perceptions and beliefs in shaping parental choices.

According to **PF5**,

“Yes, NS for HL does have effect because of the way they see HL, one might not, or a parent might not want to screen their child for it believing that if they do it means they already believe in it” (**PF5**)

This statement acknowledges the existence of a widely held notion or stigma associated with HL. The utilisation of the pronoun “they” may encompass the wider societal framework or particular cultural or community factions, so implying that other perspectives exert a substantial influence on parental determinations regarding NSs.

The subsequent statement suggests that individuals, particularly parents, may be hesitant to subject their children to screening for a certain condition due to the perception that doing so implies an existing belief or acceptance of the condition. In this context, the examination of **PF5** further explores the psychological aspects of those considering parenthood, shedding light on a possible internal contradiction. On one hand, there exists a rational comprehension of the screening procedure as a proactive approach to maintaining one’s health. On the contrary, individuals may have emotional or superstitious apprehension regarding their involvement in a screening, perceiving it as an acknowledgment or activation of an underlying issue. The expression “believe in it” appears to imply that certain parents may perceive the process of screening as a self-fulfilling prophecy, whereby the mere act of doing an assessment for a potential issue could inadvertently manifest that issue.

It becomes apparent that the decision-making process for NSs, particularly in relation to HL, may be subject to the influence of ingrained ideas and social perspectives. Although the medical community supports the implementation of screening due to its potential benefits and ability to facilitate early interventions, parents face a multifaceted decision-making process influenced by societal judgements, personal views, and anxieties. This highlights the significance of not only providing education on the medical advantages of a procedure but also engaging with and questioning wider cultural attitudes and prejudices.

4.5.2.4 Cultural and Religious Influences

Within this thematic section, the participants provided detailed accounts and narratives about the influence of both culture and religion on the decision-making process surrounding NS for hearing in Port Harcourt. They elaborated on the various cultural beliefs and religious doctrines that may impact how parents and family's approach, perceive, and eventually decide on undergoing the recommended NS for HL.

Within the intricate framework of healthcare decision-making, the amalgamation of cultural and religious values frequently intertwines with the acquisition of knowledge and accessibility, hence influencing the decisions made. In diverse geographical areas, particularly those characterised by abundant cultural and religious traditions, these belief systems may either harmonise with or challenge the scientific comprehension of health and disease. This participants in in these theme offers a comprehensive examination of the complex association, with a specific emphasis on the perceptions and behaviours associated with NS for HL. This narration also examines the impact of religion, culture, and traditional practises on health-seeking behaviours, as expressed by HCPs and parents.

4.5.2.5 Culture and Religion

The narratives provided by the participants offer insights into the complex interplay of religious and cultural beliefs within the specific context of NS for hearing in Nigeria, with a particular focus on the city of Port Harcourt.

In addition to underscoring this assertion, participant **P10**, also drew attention to the obstacle presented by “culture and religion” **in** the context of Port Harcourt, with particular emphasis on the matter of “religious fanaticism.” **P10** states.

“Yes, culture and religion is a problem, as we do have a lot of religious fanaticism in Port Harcourt. So we need to change their perceptions from

thinking they are immune to problems and illnesses because of their religious beliefs **(P10)**

The concept of “fanaticism” conveys an inclination towards an intense and unwavering commitment to religious convictions, potentially deterring individuals from pursuing medical aid. The participant’s assertion regarding the necessity to alter their perceptions, specifically in relation to their religious beliefs, underscores a significant obstacle to accessing healthcare within Port Harcourt. The adherence to religious faith as a determinant of immunity may result in persons disregarding or devaluing the significance of timely medical interventions, such as NS for HL.

It becomes apparent that religious convictions not only provide comfort and direction to several individuals, but they can also impede their ability to obtain prompt and essential medical treatment. The issue, as suggested by these two participants, lies in finding a means to bridge the gap between deep-rooted religious beliefs and the understanding and acceptance of medical interventions, ensuring the well-being and health of the community.

Again, **P10** and **P11** explores the complex relationship between religious beliefs and the pursuit of health, with a special focus on certain geographical areas or cultural contexts. Religion, as **P10** states,

“Religion has a way of influencing people’s decision especially in this part of the world people believe that as a Christian you are free from problems, and that is a very naive reasoning. So when they are sick instead of going to the hospital, they rush to their pastors, they run to their religious leaders and heads and at the end of the day, the problem still remains. While cultural norms also influence decision regarding health based on hearsay and not evidence based practice” **(P10)**

The above quotation shows the considerable impact of religion on individual decision-making, encompassing matters related to health, has the potential to override logical or empirically supported choices. One significant element of the observation is to the pervasive notion that religious affiliations, specifically Christianity within this particular framework, possess the ability to provide individuals with a form of protection against worldly challenges. This idea is characterised by the perception that being a Christian grants one exemption from encountering difficulties. While providing comfort and resilience, this concept may also discourage persons from pursuing prompt and suitable medical treatment. **P10** underscores the widespread phenomenon wherein individuals, when confronted with health ailments, give

precedence to religious intervention over seeking medical treatment. The aforementioned manifestation of spiritual dependence highlights a deep-seated belief in the intervention of a higher power, which may occasionally result in the postponement or substitution of necessary medical interventions, thereby potentially compromising one's health. The salient remark in this context is that despite engaging in religious counselling, the issue persists, indicating an urgent requirement for prompt medical attention.

In addition to religious factors, **P10** also highlights the significant impact of cultural norms on individuals' health-related choices. Cultural practises and beliefs frequently derive from long-standing traditions and may not consistently correspond with contemporary medical practises. The mention of decisions being influenced by hearsay rather than evidence-based practise highlights the limitations of depending exclusively on conventional or anecdotal knowledge. These practises have the potential to deny persons the advantages of contemporary medical science and interventions.

It becomes apparent that religious beliefs and cultural norms play a crucial role in offering substantial emotional and psychological assistance. However, an excessive dependence on these factors, at the expense of evidence-based medical practises, can potentially impact health outcomes. The maintenance of holistic well-being necessitates a delicate equilibrium between faith, tradition, and contemporary medical intervention.

The story presented by **P13** also provides insight into the significant impact of religion on individuals' perspectives and behaviours, particularly within the Nigerian cultural environment. This exemplifies the significant influence that deeply ingrained beliefs can have on decision-making processes, particularly in the context of health and wellbeing.

P13 commences by emphasising the pervasive impact of religion on the general population, stating that.

“when I talk about religion, I mean that people's minds are affected by religion here in Nigeria. Because of what they believe, some parents refuse to accept the truth and continue to live in denial. Some people even hope for a miracle to happen. If the miracle hasn't happened yet, what are you doing to stop the problem? So, religion can also change how someone thinks, which can make it hard to screen them for HL” (**P13**)

This indicates that the influence of religion extends beyond superficial rituals and practises, permeating the cognitive processes and decision-making frameworks of individuals.

The significant impact of this phenomenon is seen in multiple forms, as noted by **P13**. Certain parents, as a result of their religious beliefs, exhibit a tendency to “reject the veracity of information and persist in a state of denial.” The resistance to acknowledge a health problem, such as HL, may stem from a conviction that acknowledging it could be seen as a deficiency in religious devotion or a supposed retribution from a divine entity. This viewpoint can prove to be notably detrimental, particularly in cases where timely identification and intervention could result in enhanced health results.

Moreover, **P13** delves into the concept of hope that numerous persons embrace, motivated by their religious beliefs. The utilisation of hope as a means of deriving strength and resilience is indeed powerful; nevertheless, it becomes problematic when employed as a replacement for concrete activities. As asserted by **P13**, a critical inquiry arises regarding the actions undertaken to address the situation if the occurrence of a miracle has not transpired thus far. This statement alludes to the necessity of maintaining a harmonious equilibrium between one’s spiritual convictions and pragmatic endeavours. It implies that placing exclusive reliance on the former, particularly in the realm of health concerns, could result in overlooking timely interventions and potential remedies.

In conclusion, **P13** highlights the cognitive transformation that can be brought about by religion, specifically noting that it can potentially complicate the process of screening individuals for HL due to its impact on their thinking patterns. This observation holds particular significance, as it implies that religious beliefs may not only influence behaviour but also potentially modify cognitive frameworks, hence presenting obstacles to the completion of crucial health screenings, such as those for HL.

P13’s observations underscore the intricate relationship between religion and health in Port Harcourt, Nigeria, highlighting the significance of maintaining a harmonious equilibrium between hope rooted in faith and pragmatic, evidence-driven solutions.

PF1 and **PF3** offer valuable insights on the convergence of cultural and religious convictions with regard to health-related choices, particularly in the context of NS for HL.

Based on the narrative provided by **PF1**, it becomes apparent that religious convictions can occasionally impede the acceptance of contemporary medical techniques.

“So our religious beliefs can act as a hindrance towards NS for HL because like I earlier said, we may think it is a curse from a deity and as such should accept our fate” (**PF1**)

The above quotation highlights the profound and firmly established beliefs that certain persons may possess, which may cause them to interpret specific health situations, such as HL, as predetermined or originating from a supernatural curse. The notion that a health ailment may be attributed to a divine curse holds considerable importance. This particular reading may prompt individuals to perceive their agency as constrained, as **PF1** articulates. The act of resigning, which is motivated by religious convictions, has the ability to hinder proactive procedures, such as screenings, that have the capacity to identify issues at an early stage and enable possible treatments.

PF3 adds an additional dimension to the narrative by introducing the notion of conventional therapies. The assertion that “traditional treatments exist” implies the presence of alternative approaches to healthcare that certain persons may prioritise over contemporary medical methodologies.

“There are traditional treatments. People who believe that nature is the answer to everything may tend to agree with the traditional method of seeking solution for HL” (**PF3**)

The rationale for these options becomes more evident in light of the above statement.

In this context, the reference to **PF3** implies a more encompassing philosophical perspective that prioritises nature as the principal and potentially most reliable means of achieving healing. According to advocates of this perspective, conventional techniques, which may encompass the utilisation of herbal treatments or rituals, could be perceived as more congruent with the inherent order of nature, therefore rendering them more favourable in comparison to modern medical methodologies.

When examining these narratives, it is crucial to acknowledge that both **PF1** and **PF3** are emphasising the complex belief systems that shape health-related choices. While **PF1** places significant emphasis on religious determinism, which may discourage certain individuals from pursuing medical interventions, **PF3** explores the importance of respecting nature and adhering to traditional practises, which can also influence decisions related to healthcare. Both of these viewpoints highlight the intricate nature of health decision-making, emphasising that it encompasses more than just information or availability of resources. It is intricately connected to cultural, philosophical, and religious contexts.

Participant **P14** offers a detailed examination of the complex relationship between cultural practises and the application of scientific approaches within the healthcare field. The participant **P14**, offers a stimulating insight by asserting that cultural influences may provide

challenges for parents in adopting scientific approaches, since they may opt for traditional techniques instead.

“Culture may make it hard for parents to use scientific methods because they may try traditional methods instead, especially if they haven’t been exposed to them. However, if they have been exposed or are well-educated, they will go straight to the hospital for care instead of trying different kinds of care from people who aren’t trained or approved” (P14)

This statement underscores a possible obstacle to obtaining contemporary healthcare, namely the influence of cultural customs, particularly the preference for traditional therapeutic modalities.

The participant provides more insight on the impact of exposure and education on healthcare decision-making, emphasising that this influence is particularly significant for individuals who have not had prior exposure to relevant information or experiences. This elucidates the need of being cognisant and well-informed when making decisions regarding one’s health. Insufficient familiarity with scientific healthcare methodologies can lead individuals to place greater reliance on their existing knowledge, which frequently stems from cultural traditions.

Nevertheless, P14 presents an optimistic alternative perspective by acknowledging that individuals tend to show a preference for professional healthcare services when they are exposed to or receive greater education. The statement emphasises the significant impact of education on influencing individuals to seek immediate medical attention if they have been exposed or possess a high level of knowledge. The participant’s differentiation between individuals who are “trained or approved” and others suggests an acknowledgment of the significance of professional medical assistance.

The final comment regarding the exploration of alternative care options from individuals lacking formal training or approval provides a critical analysis of the potential drawbacks associated with relying exclusively on conventional approaches. This statement highlights the potential dangers of obtaining health interventions from unauthorised sources, emphasising the importance of adopting a more knowledgeable approach to healthcare that integrates cultural traditions with an appreciation for the benefits of contemporary medicine.

The interviews in this theme provided an extensive glimpse into the complex interplay between cultural, religious, and traditional ideologies and their implications for healthcare choices, particularly in relation to NS for HL in Port Harcourt Nigeria. The participants clearly demonstrated that these ideas, which are deeply ingrained in the society structure, might

occasionally hinder the acceptance of contemporary medical interventions. The presence of recurring themes like as religious determinism, the imagined influence of deities on health outcomes, and a strong reliance on nature and traditional remedies highlights the complex obstacles encountered by HCPs in these particular settings. These issues extend beyond simple medical intervention and delve into the domain of transforming deeply ingrained beliefs and perspectives. The narratives underscore the importance of healthcare practises that are culturally sensitive and inclusive. These approaches not only offer medical treatments, but also demonstrate respect, understanding, and integration of the diverse range of beliefs and values that individuals bring into healthcare settings. The path towards improving health outcomes in regions such as Nigeria is fundamentally characterised by the simultaneous integration of medical innovation and cultural sensitivity.

4.5.2.6 Parents Perceptions of NS for HL

In this theme, the participants offer a comprehensive examination of the complex dynamics between cultural, religious, and societal ideologies, specifically as they intersect with matters pertaining to NS for HL in Port Harcourt. The participants also provided valuable insights into the ways in which deeply held beliefs, particularly those related to religion and tradition, might shape individuals' views and responses to disorders such as HL. For example, participant **P1** and **P13** narrated two significant perspectives that provide insight into the obstacles encountered while contemplating NS for HL in Port Harcourt.

The attitude conveyed by the first individual (**P1**) underscores the profound sense of personal agency and autonomy that certain parents may experience when making healthcare decisions for their children.

“So it is my responsibility as the mother to determine if I want my child to undergo screening and if I am this person that has this idea or that has this perception that is not my portion or it can't happen to me, definitely I will not want the screening to be done” (**P1**)

The statement reflects a firm conviction in the significance of maternal intuition and the capacity to make informed decisions. Nevertheless, the degree of autonomy is also subject to the impact of internalised beliefs and views. The statement also implies that certain parents may exhibit a conviction or an optimistic bias, leading them to believe that adverse health outcomes, such as HL, are not applicable to their children. Consequently, this mindset may result in their reluctance to undergo screening procedures. This viewpoint can serve as a potent disincentive for individuals to choose medical tests, as they may perceive them as superfluous or irrelevant to their specific circumstances.

Participant **P13** provides a more comprehensive perspective on the community's strategies for recognising and dealing with potential HIs in youngsters.

“Okay, here in Port Harcourt, I know I've met a lot of parents whose children have trouble hearing. Some of these parents live in denial and even refuse to believe that their child has trouble hearing. Some people get upset when you come out and say, “I think your child has HL.” They think it's against the rules. They don't want to accept the truth, so they live in denial” **(P13)**.

The quotation above highlights the observation that a significant number of parents in Port Harcourt have encountered challenges related to the auditory abilities of their children. This suggests that the issue of HIs among children may be a prominent concern within the community. However, the succeeding accounts illustrate a shared condition of denial, wherein individuals exhibit a reluctance to acknowledge a diagnosis or even consider the possibility of HI. As observed, there exists a situation when certain parents exhibit a state of denial and exhibit reluctance in acknowledging their child's auditory difficulties. This phenomenon can be attributed to emotional obstacles, either originating from societal stigmatisation or individual convictions, which hinder the parents' ability to perceive or embrace the actuality of the situation. Furthermore, the reaction, in which individuals express distress upon being informed, showcases a defensive position that reflects a combination of scepticism and a perceived sense of boldness associated with such an assertion. The participant also expressed the notion that individuals may be associated with cultural or societal standards wherein openly addressing such issues could be deemed as socially unacceptable or discouraged.

Both participants highlight the complex interplay between individual beliefs, cultural standards, and emotional obstacles that can shape parents' choices about newborn hearing examinations. The perspectives, characterised by either an individual's unwavering belief in their own invincibility or a collective refusal to acknowledge reality, underscore the difficulties that HCPs may encounter while attempting to promote the importance of early screenings and therapies.

P13 provided insight into the complex interplay between cultural views, religious interpretations, and the recognition and embrace of health conditions such as HI. The participants initiate the discussion by underscoring the concrete aspect of the topic, stating,

“These are real problems, and some people think that HL is caused by the devil and not by old age. Some people think that once you accept a problem in your

religion, there is no way to fix it. So instead of accepting that a person has HL, they choose to live in denial and hope for a miracle. So, people think these are real" (**P13**)

The introductory statement creates the contextual understanding that HL is an objective and verifiable condition, irrespective of individual opinions or subjective views.

One notable aspect that emerged from the narration of **P13** is the viewpoint of the underlying factors contributing to HI, highlighting a widespread belief in attributing HL to supernatural factors rather than acknowledging the role of normal ageing or medical causes. The assignment of responsibility to malicious entities such as "the devil" instead of age-related degeneration can significantly impact the perspective on the process of diagnosing and treating the condition. These particular beliefs have the potential to contribute additional layers of stigma, fear, and taboo to the disease, thereby leading to increased complexity in terms of acceptance and therapies.

P13 also explores the ramifications of embracing religious acceptance through the assertion that certain individuals hold the belief that once a flaw or issue inside one's religious beliefs is acknowledged, it becomes irremediable. This observation provides a significant understanding of the potential ambivalence of religious beliefs. Religion, on the one hand, provides individuals with comfort and purpose, while on the other hand, it may unintentionally cultivate a sense of fatalism. When a health issue is perceived as a result of divine will or retribution, it assumes an unchangeable nature within the perspective of the individual who holds such beliefs. This perspective has the potential to foster a state of inactivity and resignation, thereby impeding proactive medical measures.

The participant also refers to a phenomenon of a coping strategy in which denial functions as a defensive mechanism against the distressing aspects of reality. Relying on a "miracle" is emblematic of the deep-seated belief in supernatural intervention and also reflects the feelings of despair and vulnerability experienced by those affected or their loved ones. The quotation also highlights the significant importance attached to certain values among the community. Contrary to being easily disregarded folklore, these convictions are firmly ingrained beliefs that significantly influence perceptions, decisions, and behaviours.

In essence, **P13** narrated the intricate dynamics between cultural and religious beliefs in influencing the comprehension and reactions towards HI. The quotation provides a depiction of a community that is confronted with medical reality yet simultaneously entangled in longstanding beliefs and concerns.

4.5.2.6.1 Parents as Decision Makers

The quotation from participant **P4** underscores the significant role that parents assume in making informed decisions regarding the optimal course of action for their children, particularly in matters pertaining to medical concerns.

“So the focus now is on the parents not the child. The child will be subjected to whatever the parents decide is best for the child at a particular point in time, So we’ve talked about parents’ understanding already, so what they believe in is what they will do. What they are convinced of is what they will try, now the perception will be on the parents’ level of understanding and evidence to show that such a case can be handled medically” (**P4**)

The initial statement posits that, within this particular framework, the primary emphasis is placed on the parents rather than the child, this suggests that the responsibility for the child’s welfare and the choices pertaining to their healthcare mostly lie with their parents.

The participant also reinforces the notion that children rely on the judgement of their parents. The well-being and welfare of individuals are significantly influenced by the choices made by their parents, which are shaped by their parents’ own ideas, values, and comprehension of the circumstances. Upon further examination of the

psychological aspects of the parents, the quote contemplates the significance of their views and convictions in influencing their choices. The remark highlights the significant impact of parental belief systems on individuals’ actions and behaviours. The decisions they make regarding their child’s health are influenced by their deeply ingrained convictions.

Moreover, the statement implies that the behaviours of parents are influenced by their deeply held beliefs. Individuals who possess a true conviction towards a specific strategy are more inclined to pursue that particular course of action, irrespective of external opinions or facts.

P4 emphasises the significance of parental awareness and education by highlighting the need for parents to demonstrate their understanding and provide evidence of their ability to manage such medical cases. This suggests that parental decision-making, which is influenced by their belief systems, can be enhanced with a comprehensive comprehension and evidence-based information. By possessing a comprehensive knowledge base, individuals may have a greater propensity to actively pursue medical solutions in instances where they are necessary.

Both **P12** and **P1** emphasize the pivotal role that parents, particularly mothers, play in making decisions for their unborn children. Their perspectives highlight the responsibility parents feel and the weight of the choices they make for their children before birth.

P12 starts by acknowledging the significant role of parents' decision-making, emphasising their responsibility because an unborn child cannot make choices:

“Yes, I think it plays a big part. For one thing, my unborn child can't make some decisions on its own. So, as the mother, it's up to me to decide if I want my child to go through screening, and if I'm the kind of person who thinks something isn't my problem or can't happen to me, I definitely won't want the screening to be done. So, I think that how the parents see the screening is a big part of it” (**P12**)

This establishes the context that, as decision-makers, parents play a crucial role in their child's life from the onset. Furthermore, the **P12** continues by emphasising personal agency and responsibility, which showcases the deep sense of responsibility and autonomy the mother feels regarding her unborn child's welfare. However, **P12** also introduces a perspective on personal biases and beliefs that may influence these decisions, suggesting that individual perceptions and beliefs can act as barriers. A mother's personal beliefs and potential denial of a problem can impact the health choices she makes for her child. **P12** also reiterates the idea that parents' perceptions, beliefs, and understanding significantly influence their decisions, especially in the context of medical screenings.

However, **P1**'s statement is more concise but equally impactful. By saying,

“Yes, I think it has a major role because for one thing my unborn child cannot make certain decisions for itself” (**P1**)

P1 echoes the sentiments of **P12**. This line underscores the inherent responsibility parents hold, given that their unborn children cannot advocate for themselves. It's a succinct acknowledgment of the parents' role as primary decision-makers, reinforcing the theme of parental agency and responsibility.

4.5.2.6.2 Perceptions and Attitudes

This area presents participants' perspectives on the social, cultural, and personal factors shaping attitudes toward HL and NNHS. The findings reveal that beyond medical understanding, individuals' beliefs, emotions, and lived experiences significantly influence their acceptance or rejection of screening practices. Participants' narratives expose a complex

interplay between knowledge, perception, and cultural interpretation, illustrating how societal norms and deeply rooted traditional beliefs continue to affect parental decision-making, healthcare-seeking behaviour, and responses to disability.

Across participants, a consistent theme emerges around the pivotal role of perception—how parents, families, and communities conceptualise HL and its implications. While some participants, such as **P1** and **PF1**, advocate for empathy, inclusivity, and proactive medical intervention, others highlight the challenges posed by stigma, denial, and cultural fatalism. Several narratives indicate that HL is often misconstrued as a divine punishment, curse, or sign of ancestral wrongdoing, which deters families from pursuing medical screening. Consequently, rather than viewing NNHS as a preventive health measure, some parents associate it with social shame or moral judgment.

At the same time, a number of participants underscore the potential for positive change through awareness and education. They argue that by reshaping perceptions and challenging harmful cultural narratives, communities can begin to embrace screening as a responsible act of care rather than an admission of misfortune. Participants such as **PF2**, **P9**, and **P10** stress that education campaigns and community advocacy can dispel misconceptions and encourage early intervention. Moreover, participants like **P2** connect individual attitudes with broader systemic shortcomings, noting that infrastructural limitations and inadequate health promotion perpetuate ignorance and delay effective diagnosis.

Participant **P1** addresses key aspects pertaining to the understanding and handling of HL, particularly in the context of infants, and underscores the significance of parental involvement.

“I believe it can be managed if given proper attention proper care. It’s something that doesn’t mean that someone is useless because I have a few deaf friends and you know many of them grow up having normal lives, you just have to know how to communicate with them, So I think perception of the parents plays a huge role on NS” (**P1**)

Initially, the participant conveys a sense of optimism on the potential for effectively managing HL, asserting that it may be effectively addressed with appropriate attention and care. This statement implies that by implementing appropriate interventions and providing sufficient care, the adverse effects of HL on an individual’s quality of life can be considerably alleviated. This perspective contrasts with potential prevailing negative opinions that may regard HL as excessively disabling or restrictive.

In response to the claim, **P1** also introduces a subjective element by seeking to confront cultural biases or misunderstandings towards individuals with HIs through the use of personal tales. **P1** challenges stigmatising notions about those with HIs being inferior or incompetent compared to their hearing counterparts by citing examples of their deaf friends who live fulfilling lives. Conversely, the focus is directed towards the capacity of these individuals to pursue conventional lifestyles notwithstanding their handicap.

Nevertheless, **P1** gently emphasises the significance of comprehending and being flexible in society, highlighting the significant importance of proficient communication skills in facilitating understanding and connection between those with normal hearing abilities and those with HIs. This statement can be interpreted as an implicit appeal for greater inclusivity and empathy within society. It suggests that the primary obstacles faced by those with HIs are not inherent to the impairment itself but rather stem from societal barriers or a lack of understanding.

P1 also redirected the focus towards the primary subject of NS, underscoring the significant influence of parental perspective on this matter. **P1** suggests a correlation between parental views and NS, implying that the beliefs, attitudes, and knowledge of parents regarding HL can exert a substantial impact on their inclination to opt for screening of their children. When parents possess a well-informed and optimistic outlook, they may have a greater propensity to engage in proactive measures aimed at early diagnosis and intervention.

The assertion made by **P1** highlights the notion that HL can be effectively managed through appropriate care and attention. Additionally, it addresses the societal biases that individuals with HL may encounter, emphasises the significance of effective communication, and underscores the crucial role of parental perspectives in making decisions about NSs.

P1 further offer an insightful viewpoint on the systemic issues faced by hearing impaired individuals and the significance of proactive medical intervention in guaranteeing the well-being of children.

“Okay like I said, our system does not really favour those that are impaired not just hearing impaired but, in this case, hearing impaired because most infrastructures does not give any room for deaf persons” (**P1**)

The narration conveys the inherent disadvantage faced by such individuals due to the lack of accommodations provided in most infrastructural settings. **P1** draws attention to a more extensive problem of systemic disadvantage experienced by those with disabilities, specifically emphasising those who have HIs highlighting a significant deficiency in the design of infrastructure and systems, which neglects the interests and rights of the deaf community.

This phenomenon has implications in various domains, encompassing physical infrastructure such as buildings and transportation, as well as service provision wherein communication methods may not adequately accommodate individuals with HIs.

P1 further stated.

“But I don’t know, so if I’m sighting that my child is going to get the best medical help or diagnoses, then yes I’ll welcome it, I’m open to it” (**P1**)

This quotation explores the topic of medical intervention and the parental inclination to pursue optimal healthcare and diagnosis for their children. The presence of the phrase “But I don’t know” at the outset introduces an element of uncertainty, maybe indicating an early sense of hesitation or ambiguity regarding medical interventions or the efficacy of the healthcare system. Nevertheless, this is promptly succeeded by a more resolute and sanguine perspective by encapsulating the fundamental nature of parental intuition, wherein, upon receiving guarantees of high-quality healthcare, the parent is willing to set aside any reservations and remain receptive to interventions aimed at improving their child’s well-being.

By juxtaposing the assertions, **P1** not only elucidates the inherent shortcomings in providing adequate support for individuals with HIs but also underscores the crucial role of efficient healthcare and its influence on parental decision-making about the welfare of their children. The coexistence of these emotions highlights the urgent necessity for comprehensive modifications in both infrastructure and the provision of medical services, in order to establish a more inclusive and supportive atmosphere for individuals of various backgrounds.

The assertions made by **P1** and **P15** provide light on the significant impact that personal beliefs and societal views have on the acceptance and involvement in NS for HL. Both narratives reflect the idea that deeply entrenched beliefs and the possibility of stigmatisation might influence decisionmaking regarding medical procedures.

“Okay, maybe personal views, they may see it like my child is not deaf; my child can never be deaf; I’m not doing any screening, you know. So it’s personal views, what they personally think or believe about screening or their perception about it. So I think that could also be another reason or another challenge” (**P1**)

In **P1**’s statement, the focus lies on the significant influence of personal beliefs, exemplifying a situation in which parents, due to their individual beliefs, may exhibit a state of denial over the potential presence of HI in their child, resulting in a hesitancy to pursue screening. **P1** also

underscores a resolute belief, which appears unwavering, maybe originating from a combination of parental instinct to safeguard and cultural biases surrounding disability.

P1's assertion also pertains to the subjective perspectives held by individuals regarding screening, encompassing their personal thoughts, beliefs, and perceptions on the matter. The statement highlights the inherent complexity associated with addressing and altering these deeply ingrained attitudes, so suggesting that it could potentially serve as an additional reason or obstacle. The notion that "personal views" and "perception" can serve as obstacles is reiterated, implying that individual attitudes can really hinder the acceptance and implementation of crucial health examinations.

Expanding upon this perspective, the narration made by **P15**, namely, that individuals' current perception of HL may deter them from undergoing screening altogether, as evidenced by their reluctance and aversion towards the mere mention of it, highlights the significant influence of societal attitudes.

"Peoples' view of HL with the way it is now, they might not be willing to screen at all; like with the mention of it, they will be like, ha God forbid, not my child" (**P15**) The statement also indirectly implies the existence of a general unfavourable or contemptuous attitude towards HL within society. The response "God forbid, not my child" serves to emphasise the strong revulsion towards the mere notion of a child experiencing HI, indicating a fundamental inclination to dissociate oneself from any potential connection to such conditions.

P1 and **P15** demonstrate the significant interaction between personal beliefs and cultural perspectives, which can hinder parents from pursuing or embracing newborn hearing examinations. The attitudes highlight the necessity of implementing focused awareness programmes and interventions in order to alter perceptions and guarantee that children obtain the essential care and screenings they need.

However, participant **P2** offer perspectives into two interconnected topics: the consequences of disregarding early hearing screening in children, and the overall condition of the healthcare industry in Port Harcourt with regards to the identification and management of HI. In the initial narrative, **P2** underscores the significance of prompt medical care.

"Of course! Because since they don't take it seriously, they won't screen their children not until its gets late or they get to detect later on that this child is not hearing well. They will start running looking for way to treat the child and nothing can be done at that point" (**P2**)

This observation underscores the perceived lack of attentiveness exhibited by carers or parents in acknowledging the importance of promptly identifying and addressing issues at an early stage. **P2** proceeds by illustrating a dramatic scenario that unfolds when the aforementioned problem persists without being diagnosed, and the sense of urgency indicated by the phrase “start running” highlights the feelings of panic and helplessness that might occur when one becomes aware of missed opportunities for early care. This emphasises the irreversible nature of the condition if it is neglected for an extended period of time.

In the second narrative by **P2**, the participant draws a larger relationship between the situation of the health sector and its implications for best practices relating to HL.

“Just like if you put in something good or big or something better in any sector, you’ll expect a good effect; so definitely if the health sector in Port Harcourt is being upgraded, I think concerning this HL, they will be better practice or they will start practicing it because people don’t practice it so they don’t see it as something to think about. So if the child is not hearing, they don’t know and so the child grows up that way” (**P2**)

The statement posits that the introduction of positive or substantial enhancements, particularly in the realm of health infrastructure, is likely to provide favourable consequences in terms of health outcomes and practises. **P2** delimits the scope of analysis to the present condition of the healthcare industry in Port Harcourt, contending that a dearth of attention towards hearing health leads to a state of neglect. This observation implies a prevalent lack of knowledge or indifference towards the importance of maintaining hearing health throughout the population. The assertion also serves to underscore the existence of a systematic disregard, subsequently leading to significant consequences on the personal experiences of individuals impacted.

P2’s comments offer a concise depiction of the dynamic relationship between individual and systemic elements. The initial narrative highlights the adverse outcomes resulting from parental neglect, whereas the subsequent account presents a more expansive perspective, proposing that an all-encompassing and proactive healthcare sector could facilitate the adoption of improved practises and understanding pertaining to hearing health.

In contrast, **P3** and **PF1** examine the cultural and superstitious beliefs related to diseases and their origins, with a particular focus on HL or impairment. For example, **P3** discusses a prevalent concept seen in specific cultural contexts, wherein physical or medical ailments are attributed to supernatural or external evil entities. The concept is concisely summarised by the assertion,

“It might be as a result of bewitchment or something, so that is why people do not give in to screening or go to the medical personnel for help” (**P3**)

This shows the tendency to attach spiritual origins to bodily afflictions. This perspective may be firmly grounded in cultural and religious convictions. This perspective can have discernible implications for individuals’ health-seeking behaviours, as shown from the subsequent statement, In cases where an affliction is attributed to the belief in supernatural causation, the pursuit of medical treatment may be regarded as

ineffectual or potentially unsuitable. Alternatively, individuals may opt for traditional or spiritual interventions.

PF1 further elaborates on this issue by not only examining the apparent roots of these diseases, but also delving into the societal stigma and culpability associated with them.

“People will say it is because of the evils you did or maybe your family lineage are wicked people that is why God is using this to repay you for the evil things your father, great grandfather or whoever had done in the past” (**PF1**)

The statement posits that cultural judgements frequently extend beyond an individual to embrace their entire genealogy, attributing their perceived wrongdoings or moral character to their family background. This implies a tendency to assign collective responsibility, when the perceived wrongdoings of one’s predecessors are regarded as the underlying cause of contemporary hardships. This demonstrates the retributive nature of this concept by suggesting that God employs current circumstances as a kind of recompense for the malevolent actions committed by one’s father, great grandfather, or any other relevant ancestor in the past. These judgements have the potential to discourage persons from seeking medical assistance due to a sense of resignation or fear of societal scrutiny.

These narrations by **P3** and **PF1** underscore the significant impact of cultural and superstitious beliefs on individuals’ views of health and illness. These views may serve as substantial obstacles to obtaining medical treatment, since individuals or families who hold these beliefs may opt to stay silent or refrain from seeking medical intervention owing to concerns about social stigma or a belief in supernatural causes. The quotations show the significance of incorporating cultural sensitivity and understanding into healthcare initiatives and campaigns, particularly in areas or communities where these beliefs hold significant influence.

Additionally, **PF1** demonstrated a comprehensive understanding of the various aspects related to HL in children, including personal, societal, and preventive viewpoints. For example,

PF1 started highlighting the cultural constraints and stigmatisation associated with those who have HIs.

“For example, if I have a child who is hard of hearing, and for me not to be the talk of the town, I may likely want to hide it” (**PF1**)

In this quotation, there is a clear manifestation of societal apprehension and the anxiety surrounding the potential for becoming a target of gossip or discriminatory treatment within the community. This sentiment highlights the significant influence that cultural perspectives can exert on individual choices, potentially resulting in individuals opting to hide or disregard their health concerns rather than addressing them openly.

PF1 further redirects attention from public perception to a profoundly intimate domain.

“Of course! Because it is very difficult for me if the child is hard of hearing, it will cause me much pains and I won’t be happy” (**PF1**)

The communicated emotional distress and dissatisfaction in this quote originate from a parental standpoint, highlighting the profound emotional burden that a child’s physical condition can have on a parent. This notion reflects the inherent and widespread aspiration of parents to ensure the welfare of their offspring, as well as the emotional turmoil they undergo when confronted with difficulties.

Finally, **PF1** stated,

“So, if NS for HL would prevent such from happening, then I readily submit myself and my child for such screening” (**PF1**)

This effectively connects individual and social considerations by advocating for a proactive strategy focused on prevention. The acknowledgment of the need of early screening and intervention is evident in this context. Notwithstanding the objections previously articulated regarding societal judgement and personal distress, the prevailing mood is a proactive inclination to proactively address the possibility of HI in order to mitigate potential future issues.

These narrations provided by **PF1** offer a nuanced comprehension of the difficulties and affective experiences linked to HIs in infants. Although there are societal stigmas and personal hardships that might be observed, there is also a notable tendency towards proactive medical interventions if individuals comprehend the possible advantages. This highlights the need of promoting awareness and comprehension within communities regarding health issues and the

preventative methods that are accessible. Such efforts have the potential to alter the prevailing discourse from secrecy and suffering to one of prevention and transparency.

The initial statement highlights the active engagement of participant **PF2** in promoting the implementation of early HL screening.

“I convincingly encourage parents and guardians to present their children and wards for screening for HL early, thoroughly explaining the importance as well as benefits of such screening” (**PF2**)

The statement posits a firm conviction in the importance of early screening for HL, urging parents and guardians to present their children and wards for such assessments in a persuasive manner. **PF2** suggests that they frequently engage in persuasive communication, aiming to correct any uncertainties or misconceptions held by parents and guardians. The phrase “convincingly” shows the need to effectively persuade others. The inclusion of a comprehensive explanation of the significance and advantages of this screening process serves to underscore **PF2**’s proactive strategy in terms of providing education and persuasion. This highlights the anticipated advantages of identifying and addressing HL at an early stage.

The subsequent narration explores the factors that may influence parents’ decisions to choose traditional or alternative treatments instead of medical interventions for HL.

“Most parents may likely go for the traditional or alternative therapy because of the perceived cheapness and easily accessible compared to the medical therapy. Also, they tend to trust the traditional healers than they would healthcare personnel probably because of the influence of well-meaning friends and family members” (**PF2**)

According to the participant, a significant number of parents are inclined to choose either traditional or alternative therapy due to their perception of these options being more cost-effective and readily available in comparison to medical therapy. This analysis offers valuable perspectives on the economic and accessibility variables that shape decision-making processes. Parents may be influenced by factors such as financial feasibility and accessibility when making decisions, perhaps leading them to choose options that may not be optimal or highly effective. Moreover, the issue of confidence within the medical system is addressed by noting that parents often exhibit a greater inclination to place their trust in traditional healers rather than HCPs. The trust that exists can be mostly ascribed to the impact exerted by others who are genuinely concerned and supportive, such as friends and family members. This implies that healthcare decisions may be influenced to a greater extent by counsel from the

community or family, as opposed to medical guidance. The use of the term “well-meaning” suggests that these influencers hold sincere convictions on the advantages of conventional medicines, notwithstanding their potential inferiority compared to contemporary medical interventions.

According to **PF3**,

“Many people don’t believe such a screening is possible because to them it is a curse, and they must face their fate” (**PF3**)

This indicates the existence of a widespread association between HL and the concept of a curse. The term “curse” possesses significant negative connotations and suggests a predetermined state of misfortune or affliction. The statement also serves to emphasise a fatalistic perspective, when individuals perceive themselves as lacking agency and are compelled to passively acknowledge their circumstances as predetermined. This mindset could potentially impede the inclination to pursue early screening and intervention, since it implies a sense of inevitability and despair.

Further to the assertion made by **PF4**, the influence of cultural views on health-seeking behaviour is shown by the reluctance of individuals, including parents, to screen their children for HL due to the belief that doing so implies an acceptance of its existence.

“Yes, it does. Because of the way they see HL, one might not, or a parent might not want to screen their child for it believing that if they do it means they already believe in it” (**PF4**)

This implies a shared cultural perspective, indicating that these opinions are prevalent and not confined to a few. Furthermore, there’s a connotation that screening is not merely a medical procedure but also a symbolic gesture of acknowledging and affirming the disease. **PF4** suggests that individuals may interpret undergoing the screening as an indication of their existing belief or acceptance of the disease, maybe perceiving it as an invitation for the ailment to become a part of their life.

For **P10** and **P9**, both quotations provide insights into the existing attitudes regarding screening for HL and the impact of these perceptions on individuals’ behaviour in seeking healthcare. According to **P10**’s observation, it is evident that a considerable proportion of individuals tend to gravitate towards traditional or herbal remedies as a means of addressing HL.

“As regards traditional pathways, it does hinder screening for HL as most persons tend to rely on herbal remedies, but this option does little or no good at all on HL. Reason why there is a need for their perceptions of be changed so that they can readily embrace professional medical care” **(P10)**

This inclination poses a hindrance to the effective screening for HL, as these alternative approaches have been found to offer limited or negligible benefits in terms of improving auditory impairment. This also conveys a sceptical perspective on the success of conventional interventions, highlighting their limited capacity to address the disease. This viewpoint highlights the possible drawbacks associated with exclusively depending on interventions that are not medically based. The final segment of this quotation emphasises the necessity for a shift in individuals’ perceptions in order to facilitate their acceptance of professional medical care. This underscores the importance of re-education and a modification in their perspectives. The notion being that a change in perception can lead to better, more effective health outcomes through professional medical care.

The statement made by **P9** suggests that there exists a direct correlation between society beliefs and the likelihood of individuals seeking screening for HL.

“Positive perceptions encourage screening for HL while negative perceptions will discourage it. So, people must be educated on the importance of early detection of the condition which can only be done through screening” **(P9)**

When the overall perspective is favourable, it serves as a source of motivation, and when it is unfavourable, it acts as a hindrance. **P9** further elaborates on this point by asserting that individuals should receive education regarding the significance of timely identification of the disease, a process that can solely be achieved through screening. This highlights the necessity of implementing proactive strategies, particularly by means of educational initiatives. The phrase underscores the significance of prompt intervention by the emphasis on “early detection,” highlighting its ability to avert additional difficulties or decline.

Both participants primarily focus on the topic of perception and its significant influence on the formation of health behaviours. The prioritisation of education and re-orientation implies that in order to attain improved health outcomes, a comprehensive strategy is necessary, encompassing not only the medical dimension but also the cultural ideas and misconceptions pertaining to the condition.

In this theme, a recurring theme develops regarding the substantial influence of cultural, societal, and individual perceptions on the formation of attitudes towards HL and the process

of screening for it. The influence of traditional beliefs on individuals is seen in their perception of HL as a misfortune or a consequence of past transgressions, hence impeding their inclination to pursue expert medical assistance. The apprehension surrounding society evaluation additionally hinders parents from conducting assessments on their children, hence emphasising the significance of societal norms and standards. There exists a cohort of participants that advocate for education and awareness, placing emphasis on the advantages of early screening and the necessity of transitioning from conventional therapies to expert intervention. The respondents consistently highlight the urgent requirement for educational and awareness initiatives aimed at rectifying prevailing misconceptions and fostering early detection and professional intervention.

4.5.3 THEME THREE (Parents): Factors in Access

4.5.3.1 Overview

Screening for HL is one of multiple potential options available to participants with many choosing to go directly for interventions. The reasons for these choices are explored in this theme. The participants in this theme offer a comprehensive examination of their health-seeking behaviours in Port Harcourt, Nigeria, specifically in relation to NS for HL. The narrative they offer comprehensively explores the cultural, educational, and systemic influences that determine whether individuals choose traditional cures or modern medical interventions. The interviews provide insight into the varied viewpoints of HCPs and the general public, showcasing the intricate relationship between long-standing conventional beliefs and the increasing dependence on evidence-based medical knowledge.

The viewpoints expressed by the participants represent a small-scale representation of a larger societal discussion: the equilibrium between customary customs, which are frequently associated with cultural heritage and availability, and the scientific precision and technical progress of contemporary medicine. These interviews explore the factors influencing the preference for conventional healthcare methods over alternative alternatives, the influence of education and exposure on health choices, and the important role of socioeconomic considerations in moulding these decisions. As we unravel the layers of communication portrayed in these interviews, it becomes evident that the option of healthcare courses is far from binary. It is impacted by a wide range of issues, such as cultural norms, the spread of knowledge, economic obstacles, and the perceived trustworthiness of medical institutions. These stories highlight the complex challenges and factors that influence people's decisions to seek healthcare in Nigeria, specifically regarding hearing health. They also provide a foundation for a more detailed examination of how to effectively address and overcome these complexities within the healthcare system.

4.5.3.2 Cost of Screening Services

Participant **P9** have unveiled a profound and inherent apprehension surrounding the cost-effectiveness of medical procedures, particularly screenings, and the following ramifications on the decision-making processes of households. The point made by **P9** emphasises the causal connection between the high cost of screening and the limited affordability of such services, leading to a decrease in the likelihood of individuals bringing their children for screening.

“If the screening is expensive, many people won’t afford it and thus be discouraged to present their children for the screening” (**P9**)

The phrase “expensive” **is** a subjective concept that is subject to variation among individuals. Nevertheless, the suggestion being made is that if a considerable segment of the population encounters financial obstacles that make screening unaffordable, there exists an intrinsic impediment that hinders their ability to obtain potentially lifesaving therapies. It is of utmost importance to acknowledge that the participant not only acknowledges the inability to finance the screening but also emphasises that this financial limitation serves as a demotivating issue. The presence of discouragement might result in the postponement of early diagnosis and subsequent prompt medical care, which is frequently necessary in several health disorders.

In these narrations, it becomes evident that a fundamental concern of healthcare disparity exists. Financial constraints not only serve as a hindrance to accessing medical procedures but also act as a deterrent for persons in seeking critical healthcare. The scenario has the potential to give rise to a public health issue if a substantial segment of the populace continues to be underserved or has delays in accessing crucial healthcare services. Moreover, the significance placed on cost as a “robust determinant” underscores the need to reassess healthcare pricing frameworks or implement supportive measures to guarantee universal accessibility and affordability of vital healthcare services, irrespective of individuals’ financial circumstances.

Additionally, **P1**, **P1** shed further light on the financial limitations individuals have while seeking medical treatment, particularly for specialised services such as hearing examinations. In addition, they highlight the decisions individuals make when presented with economic obstacles. The narration made by **P11** shows the need of ensuring the affordability of specialised services, particularly in the context of screening for HL.

“Also, if the services, that is screening for hearing is for a fee, then it should be affordable so that those from humble background can have access to it if they are to pay out of pocket” (P11)

This issue underscores the significance of making such services accessible to a wider population. The reference to a “humble background” denotes individuals belonging to the socioeconomically disadvantaged segment of society. The emphasis placed on the phrase “pay out of pocket” highlights the absence of insurance or social support systems that would typically cover these expenses. As a result, individuals are compelled to face the costs personally, which can impose a considerable financial hardship. This underscores the necessity of setting prices for these services at levels that do not discourage individuals from utilising them.

Further exploring the decisions taken as a result of financial limitations, P1 asserts,

“First, maybe because they are desperate to get help. They want to explore any option. So, they may tend to go for the traditional method and it may at times be cheaper than going for professional help” (P1)

The participant expresses a desire to thoroughly investigate all available alternatives. Individuals often exhibit a preference for the conventional approach, which can occasionally be more less expensive compared to seeking assistance from

professionals. The presence of desperation may serve as a significant factor, probably indicating that, individuals frequently encounter limited options when making healthcare choices. The expressed desire to thoroughly investigate all potential avenues indicates a strong commitment to pursuing a solution or alleviation. The utilisation of traditional approaches, which are sometimes regarded as substitutes for conventional medical practises, may be perceived as more readily available and economically advantageous. This issue encompasses not only economic considerations, but also those related to accessibility and the perceived effectiveness of the subject matter.

From the viewpoint of P12, it is expressed that there is a belief that the cost will not be substantial.

“I don’t think it will cost that much, though. It’s a basic thing that every child should do, so I don’t think it will be so expensive that parents will have a hard time paying for it. It was even meant to be free. It was supposed to be part of the bill, just so you know” (P12)

There exists a prevailing notion that these screenings are essential and should be accessible at an affordable or no cost, as indicated by the statement that it was intended to be included in the law. **P12** implies that the provision of screenings for children is regarded as a fundamental entitlement, reflecting a broader perspective on the responsibility of healthcare institutions in delivering vital services. The inclusion of the statement on the screening's intended incorporation into a comprehensive medical bill indicates a certain level of cognisance and potentially even a degree of dissatisfaction, as this anticipation contradicts the actual circumstances that some parents may encounter.

Regarding **P13's** assertion,

"If it's not free, I can only pay for it if there are signs, to be honest. If I think my child is showing signs of HL, I will take him or her to a screening" (**P13**)

The determination to cover the cost of the screening is dependent on the presence of observable indicators of an issue. This statement exemplifies a responsive perspective towards healthcare, either influenced by budgetary limitations or the perception that screenings are superfluous until there is a discernible indicator of a health issue. This situation highlights the predicament that numerous parents may encounter, as they must carefully consider the importance of proactive healthcare measures in comparison to observable indications of health problems, while also taking into account the financial consequences associated with each option.

Participant **P5** contributes an additional perspective to the discourse by expressing the necessity of being informed about the cost in order to effectively strategise and allocate resources.

"I need to be told about how much it is so that I can plan well for it. I do not want my wife and child to be held in the hospital for any reason" (**P5**)

The focal point lies in the importance of acquiring comprehensive knowledge regarding expenses in advance, reflecting a proactive approach towards financial planning. The statement also demonstrates a profound apprehension regarding the welfare of the family, underscoring the intention to evade any potential complexities or difficulties that may occur due to unanticipated healthcare costs.

PF3's narration shows a major obstacle in the provision of comprehensive hearing healthcare: the financial unavailability of preventative and regular services, including the inability to

acquire hearing aids. This issue is especially important as it addresses the connection between fairness in health and the wider factors that influence health.

“Majority of us are unable to afford the preventive and routine care necessary to prevent NHL; we can’t even afford hearing aids” **(PF3)**

The respondent’s use of the phrase “majority of us” entails a prevalent issue among the represented group, indicating that the economic restraints are not isolated occurrences but rather a systemic problem that impacts a significant portion of the community. These findings have significant consequences for public health, as financial obstacles can hinder the ability to obtain necessary healthcare treatments that are vital for identifying and preventing disorders like HL in newborns.

The inability to pay preventative care indicates a deficiency in accessible or adequate healthcare coverage or programmes that could enable access to such services without generating financial burden. Preventive care for HL is particularly important since promptly identifying and addressing hearing problems can greatly impact a child’s developmental path. Regular hearing screenings as part of routine care can promptly identify issues at an early stage, allowing for timely and successful therapies. Moreover, the explicit reference to the high cost of hearing aids underscores a significant deficiency in the availability of resources for individuals who are already suffering from HI. Hearing aids are an essential instrument for those with HI, enabling them to communicate more efficiently and participate more extensively in their surroundings. The exorbitant expense of hearing aids highlights the disparity in accessibility to essential medical devices, hence intensifying socioeconomic and health inequalities.

From the participant’s quote, it shows that there is a pressing necessity for governmental initiatives that can effectively tackle these economic obstacles. Possible interventions could encompass the establishment of universally financed hearing screening programmes for infants, the supply of cost-free or income-based sliding scale hearing aids, and the incorporation of hearing health into comprehensive health insurance schemes.

This viewpoint describes a situation where access to healthcare, including preventative measures and essential medical equipment, is dependent on an individual’s financial standing. This scenario is contradictory to the ideals of public health, which aim to achieve fair allocation of healthcare services and minimise health inequalities. The problem lies in not only enhancing the infrastructure and knowledge, as mentioned before, but also in ensuring that the economic

systems and regulations controlling healthcare supply do not hinder access to important health services.

4.5.3.3 Health Seeking Behaviours

In this sub-theme, the participants have demonstrated that the health-seeking behaviour of individuals in Port Harcourt, is influenced by several factors such as religious beliefs, traditional African medicine, and the socio-cultural context, when it comes to addressing HL. The process of making decisions about obtaining treatment is intricate and strongly influenced by the community's cosmological beliefs and the perceived effectiveness of conventional approaches.

4.5.3.3.1 Alternative Treatment and Conventional Medicine

In this sub-theme, it examines participants' understandings of care pathways for HL, foregrounding the tension between traditional remedies and biomedical treatment in the Port Harcourt context. The narratives indicate that many Nigerians predominantly pursue traditional options, ranging from consultations with deities to the use of herbs, concoctions, and infusions, while a smaller subgroup seeks hospital-based care. Participants attribute this pattern to cultural authority, perceived accessibility and affordability of traditional practices, community influence, and a belief that "nature" provides safer solutions. At the same time, several respondents argue that HL is diagnostically complex and often non-visible, requiring specialised tools, protocols, and evidence-based interventions that traditional healers cannot provide. Consequently, reliance on herbal remedies is viewed as impeding screening and delaying effective management.

Participant **P10** remarked that.

"Well, most Nigerians usually rely on traditional means of treatments for HL while a few rely on hospital-based treatments" (**P10**)

This suggests a widespread pattern while also recognising the presence of a subgroup within the population that relies on hospital-based therapies. The rhetoric employed by **P10**, juxtaposing the preference of the majority for conventional approaches with the inclination of a minority for hospital-based remedies, alludes to an intricate interplay between traditional and contemporary healthcare systems. The interaction between these factors can influence the outcome, and it is influenced by personal experiences, cultural views, and the perceived effectiveness or availability of other treatments.

These two evidences indicates the existence of a possible cultural obstacle to the acceptance of hospital-based therapies for specific ailments, such as HL which may have consequences for public health actions.

Participant **P4** offer valuable insights into the varied methodologies employed in the treatment of HL.

“If you look at the traditional pathways, these may involve consultations deities and things like that to see if the child’s hearing can be restored” (**P4**)

The quote implies that conventional routes, potentially rooted in cultural customs, may encompass spiritual or ceremonial approaches, such as seeking divine intervention to address a child’s auditory impairment. This signifies a belief system in which health problems are occasionally attributed to supernatural factors or origins that can be remedied through certain cultural rites.

The second remark by **P4** established methodology by delineating more orthodox medical measures.

“If it is medical treatment based, then some drugs will be used; if it is functional HL, we can then look into the mechanical means of replacing hearing” (**P4**)

The participant differentiates between treatment strategies: pharmaceutical therapies for problems that can be treated medically, and assistive devices or surgery, which are referred to as “mechanical means,” for cases of functional HL. The significance of accurate diagnosis in determining the most suitable treatment approach is emphasised by this dichotomous viewpoint, acknowledging the validity and presence of both medical and traditional alternatives in the community’s pursuit of healthcare.

PF2 expresses a personal inclination towards traditional medical interventions for addressing HL, implying that they consider this method to be the most authoritative.

“Medical care is the paramount pathway for me, but some persons may go for the traditional pathway for HL” (**PF2**)

Nevertheless, this also implies an awareness that people’s choices in obtaining healthcare differ, frequently affected by cultural, societal, or personal convictions. This demonstrates an acknowledgement of the simultaneous existence of contemporary and conventional healthcare approaches and emphasises the significance of honouring varied viewpoints on health and therapy within a community. Furthermore, it suggests that although someone may

have a preference for contemporary medical techniques, they acknowledge that others consider traditional ways to be equally legitimate and significant.

P12 asserts that medical practitioners possess a distinct aptitude in addressing HL, contending that the characteristics of HL distinguish it from other medical ailments.

“I think that doctors are better at helping people with HL in this way because HL is different from almost any other illness that could affect any part of the body” (**P12**)

This perspective highlights the intricacy of HL as an illness that not only impacts a particular organ system but also has extensive consequences for an individual’s communication skills, social connections, and general well-being. The participant’s trust in doctors is probably based on the belief that the education and skills of medical experts are specifically designed to efficiently handle complex health problems.

Additionally, participant **P12** emphasises the difficulties that traditional healers may encounter while trying to recognise and treat deafness, as it is not easily observable.

“When you see a deaf person, you might not know he’s deaf until he tells you. It doesn’t really show on the face, so I guess that’s why it’s hard for many traditional healers to help because they can’t tell what’s wrong because they don’t have the right tools to diagnose or see inside the body or anything” (**P12**)

This emphasises that HL is not immediately evident, unlike other illnesses that may have obvious symptoms. The lack of visibility is a challenge for traditional healers throughout the diagnostic procedure, since they typically depend on observable indications, verbal exchange, and lack access to the diagnostic instruments employed by medical experts for internal examination. The participant suggests that the absence of these instruments hinders the ability of traditional healers to effectively treat diseases such as HL, which necessitate specific diagnostic techniques for identification.

In contrast, participant **P12** also highlighted the benefits of getting professional medical care, particularly for cases such as HL that necessitate specialised diagnostic knowledge.

“And there’s a benefit to going to a professional doctor: they have access to a wide range of tools, methods, and scientific processes that can help them figure out if someone is deaf or if there’s a way to fix it. So, I think professional medical help is much better in this way” (**P12**)

Professional doctors possess an extensive range of medical equipment and techniques, as well as scientific understanding, which empowers them to precisely diagnose and treat HL. The participant is endorsing the efficacy of professional medical services, proposing that the available resources for medical experts enable a more comprehensive and potentially fruitful approach to healthcare compared to conventional techniques. This perspective emphasises a confidence in the effectiveness of contemporary medical therapies and the conviction that such methods are preferable for addressing intricate health problems.

Participant **P15** also supports evidence-based medical approaches above traditional methods for health treatment. This perspective is based on the claim that conventional approaches lack empirical evidence and study to support their effectiveness.

“Since the traditional aspect is not proven, for now, I think everybody should go with the medical aspect because the traditional aspect has not been proven; it has not even been researched more so the medical aspect is better” (**P15**)

P15 advocates for prioritising the research-based and established medical approach over traditional techniques until the latter undergoes thorough scientific examination.

This position represents a wider discussion on the necessity for verified treatments in healthcare, highlighting the significance of safety, effectiveness, and scientific validation in the selection of healthcare interventions.

PF1 offer significant insights into the function of TCM in primary care and the perceptions of its safety compared to orthodox medicine.

PF1, asserts a noteworthy claim:

“I could tell you that 80% of our primary care is based on the use of herbs, concoctions, infusions and all that” (**PF1**)

The numerical estimation indicates a significant dependence on conventional herbal therapies in the primary healthcare environment of the interviewee’s specific situation. The 80% figure not only suggests but also signifies a prevailing trend, suggesting either a cultural inclination for traditional approaches or potential obstacles in obtaining mainstream medical treatment. The mention of “herbs, concoctions, infusions and all that” indicates the utilisation of a wide array of herbal techniques. The informal style of the expression “and all that” may also imply a sense of familiarity and tolerance towards these acts as being ordinary within the community.

Furthermore, the inclusion of primary care is vital as it frequently serves as the initial point of contact for those seeking health interventions. The prevalence of herbal-based care indicates a deep incorporation of traditional practices into the core framework of the healthcare system. Furthermore, it prompts inquiries regarding the organisation of the healthcare system, the regulatory frameworks that oversee primary care, and the possible necessity for incorporating traditional and conventional medicine practices.

Upon careful examination of these statements, it becomes clear that TCM holds a significant position in the primary healthcare system of the community mentioned by **PF1**. These observations also emphasise the importance of comprehending the interaction between cultural traditions and medical decision-making, as well as the necessity of using evidence-based methods when incorporating TCMs into modern healthcare.

Participant **PF3** explore the factors that may lead individuals to favour traditional ways over mainstream medical procedures, specifically when it comes to addressing cases such as HL.

“People who believe that nature is the answer to everything may tend to agree with the traditional method of seeking solution for HL” (**PF3**)

The initial statement made by **PF3**, suggests a perspective that regards nature as a universal remedy. This viewpoint is likely derived from a more comprehensive ideology that nature inherently offers the essential resources for the process of healing and maintaining good health, a principle that is widely accepted in several traditional medical systems. The use of the term “may” suggest that this statement is not universally applicable, but rather reflects a propensity observed among individuals holding specific ideas. The concurrence with conventional approaches regarding HI also implies that these individuals may be more receptive to experimenting with herbal remedies, therapeutic techniques, or holistic approaches based on natural components, rather than opting for surgical or pharmacological interventions derived from contemporary medical science.

The statements provided by participants **P10**, **P13**, and **P14** also present a range of perspectives regarding the overlap between conventional remedies and contemporary medical approaches in the realm of HL therapy.

Participant **P10** offers a discerning viewpoint regarding the dependence on conventional methods for addressing HI,

“As regards traditional pathways, it does hinder screening for HL as most persons tend to rely on herbal remedies, but this option does little or no good

at all on HL. Reason why there is a need for their perceptions of be changed so that they can readily embrace professional medical care” (P10)

This position is based on the observation that conventional treatments, particularly herbal therapies, may not be efficacious in addressing HL, a condition that typically necessitates precise medical or surgical intervention. The participant highlights the importance of altering public beliefs, proposing that adopting professional medical treatment instead of traditional approaches could result in improved health outcomes for individuals with HI. This is a request for educational initiatives and public health interventions that aim to question prevailing assumptions and advocate for evidence-based therapies.

P13’s statement highlights that individuals seek remedies through both conventional and alternative approaches.

“People look for cures in both medical and non-medical ways. I think I’ve heard of some people trying to treat an ear problem with TCMs or medicines made by hand. But I think the best way to solve that problem is through medicine, not the old way” (P13)

However, a prevalent pattern in health-seeking behaviour is the inclination to seek resolution for such problems primarily through medical means rather than traditional approaches. This often involves individuals considering a range of alternatives, both conventional and unorthodox, in their pursuit of better health. This participant recognises the presence of several healing methodologies but ultimately supports TCM as the superior approach. The statement also reflects a confidence in the advancement of medical science and its capacity to provide more efficient remedies in contrast to conventional treatments, commonly referred to as “the old way,”

4.5.3.3.2 Preferred Treatment Options and Efficacy

In this theme, participants especially the HCPs, due to their knowledge, experience and expertise, offer a negative perspective on TCM, particularly about its effectiveness in treating HL. They also shed light on how TCM is perceived by individuals who support current medical procedures. For example, Participant P12 expresses doubt over the effectiveness of conventional therapies for HI,

“I don’t think I’ve ever heard of anyone getting better after traditional treatment. If it worked well, I don’t think we’d have as many deaf people as we do. I know that it’s hard for even professional medical doctors to treat HL, let alone

traditional doctors, who may or may not know what they're doing. I don't think it works very well" (**P12**)

This comment casts doubt on the efficacy of conventional approaches in managing HL, a disorder recognised for its inherent difficulty even for modern medicine. **P12** highlights that if conventional therapies were efficacious, it is expected that the incidence of HL would be comparatively reduced. The participant recognises the intricacies associated with treating hearing disorders and proposes that conventional practitioners may lack the specialised expertise necessary for such complicated tasks. The phrase "may or may not know what they're doing" suggests a lack of trust in the competence of conventional doctors, which is a major worry when addressing health disorders that greatly affect an individual's well-being.

HCP5 offers insight on the wider societal perception of TCM,

"Because in this time, TCM though popularly practiced is quickly regarded as quackery by those who practiced conventional or orthodox medicine" (**HCP5**)

This phrase illustrates the dichotomy between traditional and conventional medicine and emphasises the dismissive stance that orthodox medical practitioners may adopt towards traditional approaches. The phrase "quackery" is a forceful condemnation, suggesting that conventional medicine is not only perceived as ineffectual but also as deceitfully or ignorantly asserting to provide cure. TCM's lack of legitimacy in the scientific world stems from its methodologies, which often lack empirical research that fulfils the requirements of orthodox medicine, despite its popularity among particular groups.

These participants have made it clear that there exists a profound scepticism and a substantial disparity in believability between traditional and conventional medical methods. The rejection of TCM as ineffective or fraudulent can be attributed to several factors, such as the absence of rigorous scientific validation, the reliance on anecdotal evidence to support its effectiveness, potential safety risks, and the fundamental disparities in the underlying principles of traditional and conventional medicine. The contrast between these viewpoints highlights the need for a conversation between the two realms of healthcare. Engaging in such a discourse could result in a more comprehensive strategy that combines the holistic viewpoint of TCM with the safety and effectiveness criteria of mainstream medical techniques. Furthermore, it highlights the significance of honouring cultural customs and convictions while pushing for scientifically supported health interventions, particularly in public health campaigns and health promotion endeavours concerning HI.

In this sub-theme, **HCP2** highlight a bias towards traditional medical treatments rather than alternative alternatives in the treatment and comprehension of HL.

“Medical arrangement seems to be the option, the way forward. Is because a lot of people have been seeking their different ways to solve this problem, that is why the problem keeps on elongating we have more person who at the end of the day develop HL because people tend to follow alternative means”
(**HCP2**)

The suggest that opting for medical arrangements is the recommended course of action. **HCP2** proposes that the active pursuit of different alternative therapies may be exacerbating the issue of HL in the population. The word “medical arrangement” is most commonly used to describe organised and methodical methods to healthcare that are based on TCM. **HCP2** highlights that the wide range of non-standardised and unproven treatments may cause delays in

implementing effective intervention, leading to a rise in the frequency or intensity of HL. This may be attributed to the ineffectiveness of alternate approaches or a delay un seeking proper medical treatment. The term “the problem keeps on elongating” suggests that instead of being resolved, the issue of HL is deteriorating or becoming more widespread.

Another comment by **HCP2** emphasises that medical examinations and screenings conducted in a hospital setting are currently the only reliable method to comprehend the situation, assess the severity of the problem, and determine the appropriate course of action.

“For now the only means of understanding the situation, the degree of the problem and how to manage is by means of medical examination, the screening done at the hospital is the only way out for now there is no other alternative that supersede this in my opinion” (**HCP2**)

HCP2 emphasises the significance of these procedures as the most dependable ways to diagnose and assess the degree of HI. The phrase “the only way out” suggests that, according to **HCP2**, hospital-based screenings are not only the most optimal choice, but also the sole feasible approach to properly tackling the problem. The claim that “there is no other alternative that supersedes this’ disregards the possibility that existing alternative approaches may offer an equal or superior comprehension of HL compared to traditional medical assessments.

HCP2 strongly supports the use of western medical methods for diagnosing and treating HL. It demonstrates confidence in the methodical, data-driven approach that is fundamental to

contemporary healthcare, while also expressing doubt towards alternative methods that lack comparable empirical proof. **HCP2**'s viewpoint is most likely influenced by a blend of clinical expertise and a recognition of the significance of timely and precise diagnosis in the management of hearing disorders.

The opinion proposes that the primary focus of HL management should be on improving the availability and quality of medical examinations and screenings, rather than on alternative approaches that have not been well validated. This viewpoint, although it may be disputed by proponents of alternative therapies, emphasises the main difficulty in public health: reconciling cultural customs with medically proven treatments.

Conversely, **HCP5** and **HCP3** discuss the comprehensive approach to screening for HL in Nigeria, taking into account other dimensions of managing the problem. **HCP5** addresses effective interventions for individuals experiencing HI.

“Well, in the case of HL, we can now teach the individual how to communicate through sign languages and there are different sign languages available ranging from Nigerian Sign Language to American Sign Language with approved standard and other types. Secondly, there are hearings aids though they are extremely expensive, but they are available and can be accessed”
(**HCP5**)

Firstly, it recognises the importance of sign languages as a crucial means of communication for individuals with HIs, demonstrating an appreciation of the necessity for inclusivity and accessibility in communication. The reference to an “approved standard” implies a support for structured and controlled sign languages that have received official recognition and can enable consistent communication. Furthermore, the mention of hearing aids as a potential remedy, despite their high cost, demonstrates an acknowledgment of the progress made in utilising technology to address HI. The acknowledgement of the cost obstacle necessitates the inclusion of economic factors in the provision of hearing aids, as they may be inaccessible to individuals with financial limitations.

HCP3 offers a comprehensive understanding of the cultural factors that impact how HL is perceived and addressed.

“In this aspect you know Nigeria is a multilingual country and multi-culturally diverse country, so people in one sector or region may feel like it is a curse from the gods so they want to consult traditionally. However, many cases that I've seen always ended up in medical treatment whereby they end up in a

hospital and they have a better result from the hospital. So personally, I would not support traditional means of solving or resolving HLEs. I think it is a direct medical case” (**HCP3**)

This statement acknowledges the intricacy of tackling health concerns within a culturally heterogeneous setting. The mention of the notion that HL could be interpreted as a “divine curse” underscores the significant influence of cultural beliefs on individuals’ tendencies to seek medical assistance for their health issues. Nevertheless, **HCP3** acknowledges that even while these customary consultations take place, the instances frequently lead to the pursuit of conventional medical intervention, suggesting that such intervention tends to yield more advantageous results. **HCP3**’s personal position against conventional approaches in favour of medical intervention highlights a desire for evidence-based methodologies.

It is apparent that both **HCP5** and **HCP3** acknowledge the significance of medical and communicative interventions in the management of HL, displaying a distinct preference for evidence-based medical treatments. **HCP5** emphasises the use of practical communication tools and technology to empower individuals with HL. On the other hand, **HCP3** explores the cultural obstacles and eventually supports medical therapy based on observed results. Both viewpoints emphasise the necessity of implementing holistic care approaches that cater to the medical and social requirements of those experiencing HL. Additionally, they emphasise the significance of cultural sensitivity in public health programmes, the necessity of providing access to medical and communicative resources, and the potential advantages of integrating traditional beliefs with contemporary medical knowledge to enhance health outcomes.

P13, and **P12** offer valuable perspectives on the intricate dynamics of cultural beliefs, degrees of knowledge, and trust in the healthcare system, specifically when it comes to making decisions between traditional and medical treatments for health conditions like HL.

P13 explores the subject of awareness and its influence on the selection of treatment options.

“Another problem is that it’s hard to get. How well do people know that these problems can be fixed with medicine? So, if people know, that can help point them in the direction of medical help. But if people don’t know that HL can be fixed with medicine, they’ll go back to the old ways” (**P13**)

P13 stresses that limited access to information poses a hindrance to the pursuit of medical care. The assertion assumes that if individuals were cognisant of the fact that medical interventions may proficiently manage or eradicate their ailment, they would be more inclined to actively pursue such interventions. The mention of “the old ways” implies that without this

knowledge, individuals may resort to conventional cures that are deeply ingrained in their society or more easily obtainable.

In this theme, participants have narrated the complex connection between traditional beliefs and practices and the use of modern medical procedures in the healthcare system, specifically in respect to the treatment of HL. These interviews reveal an intricate network of healthcare dynamics characterised by cultural conformity, socioeconomic elements, educational inequalities, and institutional confidence.

The conversations highlight a complex situation where TCM, which is based on indigenous knowledge and cultural legacy, is often the initial choice for many people dealing with health problems. The inclination towards conventional approaches is impacted by various factors, including cultural beliefs about sickness, reliance on ancestral customs, and occasionally, scepticism or complete lack of trust in the medical system. Traditional cures are regarded as both cultural expressions and cost-effective alternatives to current medical treatments, which are often perceived as pricey and less reliable.

The interviews together demonstrate a shared agreement on the necessity of enhancing public health education to address the knowledge disparity between conventional and contemporary medical approaches. There is a clear demand to improve the availability of dependable medical services and foster confidence in the healthcare system. The purpose of such endeavours is to guarantee that individuals possess accurate knowledge and possess the capacity to make decisions that result in the most favourable health consequences.

4.5.3.4 Perceived Barriers to NS for HL

4.5.3.4.1 Overview

In this sub-theme, participants demonstrate a thorough exploration of the diverse concerns related to NNHS, the public's involvement with these services, and the overall trust in the healthcare system. These discussions, led by healthcare experts and parents, explore the complexities of promoting hearing health, ensuring access to services, considering economic factors, and evaluating the reliability of medical staff. The participants provide valuable perspectives on the obstacles that hinder the broad acceptance and execution of efficient programmes for NS for HL.

One notable worry among the participants is the noticeable lack of knowledge regarding HL, highlighting the urgent requirement for more comprehensive health education and promotion efforts. The narratives also emphasise the significant presence of economic obstacles, as participants point out the exorbitant expenses associated with preventive care and assistive

devices like as hearing aids. These costs prevent many people from being able to receive these crucial services. The discussions also indicate that although hearing screening may be theoretically accessible, actual availability of these services is sometimes impeded by geographical, budgetary, or infrastructural obstacles.

Exacerbating these problems is the question of trust in the healthcare system. An underlying theme seen in the interviews is the concern about the calibre of care delivered by HCPs. The apprehensions regarding medical errors and the proficiency of HCPs were seen as substantial obstacles to using preventive healthcare services. Furthermore, the participants indicate that societal beliefs and shared encounters regarding the effectiveness of the healthcare system significantly influence individual healthcare choices, possibly resulting in a hesitancy to utilise the treatments that are accessible.

These narrations not only represent individual perspectives but also highlight larger systemic obstacles within the healthcare delivery system, such as inequities in services and the urgent requirement for comprehensive policy changes.

4.5.3.4.2 Lack of Availability, Awareness, and Knowledge of Screening

Participant **P13**'s remark shows the crucial significance of accessibility and awareness in the realm of identifying and addressing HL. The participant expresses a series of conscious thoughts that result in taking action, emphasising that understanding a health problem is a prerequisite for seeking remedies.

“Accessibility and being aware. If people know about a problem, they can start to think about what they can do about it. So, once someone knows that this kind of problem exists, they will look for the signs. Early detection is also important. Parents will find it easier to notice problems early on now that they know about them. Once parents know about the problem or know that screening is available, they will work to stop the problem in the right way” (**P13**)

The participant posits a fundamental assumption which emphasises the concept that being aware is the initial stage in adopting proactive behaviour to achieve better health. The rationale is clear and convincing—without consciousness, the populace stays unaware of prospective health concerns and the essential measures to tackle them. Subsequently, the participant establishes a connection between their consciousness and the ability to identify the indicators of the issue, which, in this particular instance, pertains to the impairment of hearing. Knowledge is not isolated; it transforms into a state of watchfulness for indications and indications of HI, which is the fundamental basis of techniques for detecting it at an early stage.

P13 also identifies the importance of detecting anything at an early stage. It is frequently linked to improved results in health interventions. **P13** asserts that parents who are well-informed are more capable of recognising indicators of HL in children, which is an essential claim. Timely detection of HL can result in interventions that might potentially halt the progression of HL and facilitate improved adjustment through the implementation of hearing aids, cochlear implants, or other forms of assistance.

The participant also discusses the matter of accessibility, stating that once parents are aware of the situation or the availability of screening, they will take appropriate action to address the issue. This phrase implies that in order to be effective, awareness needs to be combined with screening services that are easily available. Merely possessing knowledge is inadequate if the necessary resources to use that knowledge are lacking. Accessibility in this context refers to more than simply the physical availability. It also includes affordability, convenience, and the existence of a supportive structure that promotes screening.

P13 is endorsing a comprehensive approach to the prevention and treatment of HL. An effective strategy would entail disseminating knowledge to the general population regarding HL, its indicators, and the accessibility of screening facilities. Additionally, it would necessitate ensuring that these services are readily available to anybody who require them. It can be difficult, especially in areas with little resources and inadequate healthcare facilities. However, the observations made by the participant serve as a strong reminder of the essential principles of public health: being informed and having easy access to healthcare services are crucial factors that influence people's behaviour in seeking medical help and, consequently, their overall health results.

Furthermore, **P1** also offers a viewpoint on the perceived lack of competence among HCPs in Nigeria. The participant suggests that this issue is generally recognised throughout the Nigerian population and proposes that this collective awareness likely leads to a common feeling of fear or difficulty.

“What I think will also be on the mind of so many other Nigerians because this problem is something that affects everybody, the incompetency of doctors and nurses is something that affects everybody and it is something everybody is aware of. So, if everybody is aware of it, they will likely have the same fear or the same challenge” (**P1**)

The crux of this remark revolves around the problem of perceived incompetence within the medical profession, which is considered to be a widespread issue that affects the entire public,

emphasises the widespread influence of the issue, indicating that no social group is exempt from the repercussions of insufficient healthcare supply. The extensive influence of this issue emphasises its pressing nature and suggests that it is not a singular concern but rather a prevalent matter of public health.

Moreover, the participant suggests that the general populace is well aware of these deficiencies, which could lead to a lack of trust in the healthcare system. The emotion of fear and challenge, as described by **P1**, may arise from various factors, such as anecdotal experiences, media reports, or personal encounters with the healthcare system. The prevalence of these emotions within the population may suggest a collective awareness concerning the condition of healthcare, potentially influencing the rapport between patients and doctors, patient adherence to medical advice, and overall public health results.

The remark also initiates a discussion on the possible consequences of these perceptions. If the general population possesses a shared fear or foresees difficulties as a result of perceived lack of ability, it may result in a decline in the utilisation of healthcare facilities, heightened self-administration of medication, or a shift towards alternative medicine. This could potentially worsen health issues and impede the progress of health promotion and illness prevention.

An in-depth analysis of this assertion necessitates a thorough investigation into the origins of this perceived lack of ability. It prompts inquiries about the education and ongoing professional growth of HCPs, the existing health systems that uphold clinical practice, and the regulatory entities accountable for upholding healthcare standards.

Nevertheless, it is crucial to acknowledge that the term “incompetency” may not exclusively pertain to the abilities or expertise of HCPs but may also encompass broader systemic problems such as insufficient funding, subpar infrastructure, inadequate staffing, and limited access to state-of-the-art equipment and resources. These factors can hinder the provision of high-quality care.

In order to fully address the concerns raised by **P1**, a multifaceted approach would be necessary. This would encompass an evaluation of healthcare education and training programmes, an examination of the healthcare delivery system, and a focused endeavour to enhance healthcare policy and infrastructure. In addition, enhancing public opinion may include the implementation of transparent communication techniques, active involvement of the community, and a steadfast dedication to enhancing the quality of healthcare services.

Overall, the participant’s narration is a powerful expression of a widely held public view that could have important consequences for the provision of healthcare and the promotion of health

in Nigeria. An in-depth comprehension of the intricate interaction of HCP proficiency, systemic obstacles, and public perception is necessary to enhance health outcomes and improve the quality of healthcare services.

PF4 provided narrative rich in information describing the linked issues of healthcare service supply, notably relative to the availability and awareness of healthcare facilities and services.

From the perspective of **PF4**, there is a valuable insight on the behavioural factors that influence the utilisation of healthcare services.

“Most persons until they are being told about certain things that’s when they do it, so maybe because they’ve not been told and maybe there is no facility for it and so whenever they visit health centres, the health givers don even mentions it” (**PF4**)

It implies that patients tend to respond to information given to them at the time of their medical appointment, rather than taking proactive measures beforehand. The suggestion that health practitioners may omit mentioning services due to their unavailability implies a breakdown in communication that impacts individuals’ health seeking behaviours. This underscores the need of well-informed HCPs who possess the ability to teach and steer patients in a very effective manner. It also raises concerns about the structural barriers that limit the diffusion of information, such as the lack of facilities or resources that health care might believe are common knowledge.

The healthcare system is confronted with substantial obstacles in delivering services, mostly due to a scarcity of staff and infrastructure. This predicament is further exacerbated by a lack of understanding among both HCPs and the general population. They underline the necessity for a holistic approach that concurrently addresses the development of healthcare facilities and personnel training while employing powerful health communication methods to guarantee that the public is aware and empowered to seek care.

These issues revealed by **PF4** indicate a systemic problem that necessitates a comprehensive and multifaceted approach. Policy interventions should prioritise the enlargement and enhancement of healthcare facilities, the growth of training programmes for HCPs, and the execution of comprehensive awareness campaigns to promote public involvement with health services. Only through a concerted effort that addresses both the supply of healthcare services, and the demand side of public health involvement will these difficulties be properly solved.

In addition, participant **P1** elucidates the complex problem of NNHS in Nigeria, particularly in Port Harcourt with a specific emphasis on the twofold obstacles of awareness and comprehension among the general population.

“Okay it is possible that so many of them are not even aware that there is something like screening for newborn. It is also possible because it is almost like I have heard about it I know is common practice in the western world but in Nigeria it is not so common you know so many of them may not even be aware that such a thing is in place. If they are aware they may not even fully understand how it works and because they don’t understand how it works, they don’t want any part of it” (**P1**)

P1 asserts that a considerable segment of the populace lacks awareness regarding the accessibility of NS. This lack of understanding is a crucial public health concern because it directly effects the rate of early detection and intervention for disorders like HL, which can have profound repercussions for a child’s development. The participant compares the scenario to the Western world, where NS is a routine practice, to underline the discrepancy in public health initiatives and the standard of care. This study aims to emphasise a discrepancy that could be influenced by variations in health policy, distribution of resources, and health education across different regions.

Furthermore, **P1** deals upon the topic of comprehension. Despite individuals’ awareness of the screening, they may lack a comprehensive grasp of its aim, the processes entailed, or the potential advantages. This lack of awareness can lead to apprehension or mistrust, which in turn can lead to unwillingness to participate with healthcare services. **P1**’s statement also emphasises the human tendency to avoid what is not understood, a behaviour that can be a significant impediment to the adoption of good health interventions.

P1’s observations indicate that in order to enhance the adoption of NNHS in Nigeria, it is crucial to tackle these obstacles by implementing focused health education and communication tactics. This entails not only distributing information regarding the accessibility of screening but also guaranteeing that the information is unambiguous, culturally attuned, and elucidates the significance and safety of the procedure. Additionally, it might be imperative to integrate this teaching into more comprehensive health programmes and utilise many communication methods to effectively reach distinct groups of the community.

P1 indicated the necessity of adopting a systematic approach to health promotion that integrates raising awareness with improving comprehension. Healthcare authorities and

clinicians should strive to clarify medical procedures and communicate the advantages of early screening, especially in environments where these practices are not yet widespread. This strategy will play a crucial role in dismantling the obstacles to healthcare participation and in advancing the health and welfare of children in Nigeria.

P2 has also revealed two main issues pertaining to the management of HL: a widespread lack of public awareness and the insufficient condition of healthcare facilities, namely in Ear, Nose, and Throat (ENT) departments. These concerns are intertwined and indicate systemic problems in the promotion of public health and the infrastructure of healthcare in relation to the management of auditory health.

The initial quote highlights a noticeable lack of public knowledge regarding HL.

“Most people do not have knowledge about HL and then the facilities we have they’ve not been upgraded because since screening for HL is very important, these facilities need to be upgraded especially I am still talking about ENT department in every facility or every hospital” (**P2**)

This lack of understanding is concerning because it implies that people may not fully understand the significance of maintaining good hearing health. This could result in a failure to actively seek medical guidance or screening services. The informant underscores the crucial need of conducting screenings for HL, as it serves as a preventive healthcare strategy. Regular screening enables prompt identification and action, which is vital for the management and reduction of hearing-related problems. The mention of the requirement for facility renovations implies that the existing infrastructure may lack the requisite technology or resources to conduct sufficient screenings or deliver the necessary care. The insufficiency of resources may result in inadequate care and subpar outcomes for patients.

The second quote by **P2** expands on the previous argument, proposing that facility enhancements are essential not only for service supply but also for cultivating awareness.

“They need to be upgraded so that they can better do their job well and also create awareness too so that people know especially in antenatal units where mothers go for antenatal; they need to know of this before delivery so that once they deliver, they know their child is to be screened for HL one month after and at three months too” (**P2**)

The emphasis on prenatal units highlights a key opportunity for intervention, as pregnant women can receive education regarding the significance of conducting hearing screenings for

newborns. This education has the potential to create a chain reaction, enabling new parents to acquire the understanding necessary to pursue hearing evaluations for their children at crucial stages of development, such as one month and three months after birth. Early screening is crucial as it might result in the timely detection of HI, which is essential for the acquisition of language and communication abilities.

Both quotes by **P2** imply endorse a comprehensive approach to tackling the problem of HL, which includes enhancing infrastructure and implementing educational programmes. Enhancing infrastructure can enhance the capabilities of HCPs to accurately detect and effectively treat HI. Simultaneously, via the incorporation of educational initiatives, specifically within antenatal care environments, a proactive strategy can be used to raise awareness and educate the public about the importance of early identification of HL and the healthcare resources that are accessible.

The viewpoints indicate that implementing a comprehensive healthcare model that integrates improved facilities with strong health promotion initiatives could greatly boost results for persons who are at risk of or currently experiencing HL. This is consistent with the overarching goals of public health, which prioritise not only the management of illnesses but also the prevention of health problems through education and the enhancement of healthcare services.

Participant **P4** focuses on the problem of NNHS in the healthcare system. It highlights two main issues: the lack of popularity due to a lack of knowledge among the population, and limited accessibility in healthcare facilities.

“Yes, NNHS is available but not so popular due to knowledge based deficit in our population. I have come to see it in a few governments owned hospitals and selected private hospitals which is not so accessible to everybody” (**P4**) The participant recognises the presence of NS for HL a crucial early intervention measure that can have a substantial influence on a child’s development. Nevertheless, the efficacy of a screening programme is not exclusively contingent upon its mere presence; it is also crucially reliant on public consciousness and the utilisation of the service. It also implies that there is a lack of public health education regarding the significance and implementation of NNHS. The lack of information in this area can result in the service not being fully utilised, perhaps leading to delays in diagnosing and managing HL in babies. The optimal timeframe for successful management in cases of congenital HL is limited, and any delays can result in enduring consequences for speech, language, and cognitive advancement.

In addition, **P4** highlights the problem of unequal access which suggests an inequality in the delivery of services that is probably impacted by geographical and socioeconomic considerations. The phrase “not so accessible to everybody” refers to the possibility of disparities in healthcare provision, whereby individuals belonging to specific demographics or residing in certain regions may have obstacles in obtaining NNHS services. There are several possible reasons for this, including being physically far from places that provide the service, financial limitations, or HCPs not referring individuals due to their own lack of knowledge.

P4 indicates that in order to enhance the adoption and prevalence of NNHS, it is necessary to make a focused endeavour to tackle both the lack of knowledge among the general public and the availability of the services. Public health measures targeting the dissemination of knowledge regarding the significance of NNHS are crucial. These could encompass advertising initiatives across several media platforms, as well as direct communication by HCPs during prenatal appointments. Concurrently, there is a requirement to extend the provision of the service to further hospitals and clinics, guaranteeing that it is not only accessible but also available in terms of both location and affordability for all demographic groups.

Participant **P1** expresses apprehensions regarding the healthcare system that may impact their decision-making regarding NNHS. Their concerns revolve around the effectiveness of HCPs, the diagnostic procedures employed, and the state of the medical facilities.

“Okay I think my major challenge will be the uncertainty as to how efficient the doctors and nurses are and the form of diagnosis they use; their medical facility is it modern enough? Is it hygienic enough? I think those are the things I will be looking out for or those are the challenges I would have I am to allow my child to go for a hearing screening” (**P1**)

The phrase “uncertainty” implies a deficiency in trust or assurance in the healthcare system, which poses a significant obstacle to obtaining healthcare services. The uncertainty may arise from prior experiences, anecdotal evidence, or overall perceptions on the healthcare system’s capacity to deliver high-quality care. The competence of doctors and nurses is being called into doubt, indicating a worry over the credentials, knowledge, and proficiency of the healthcare personnel. In the context of NNHS, the effectiveness of HCPs is crucial due to the short timeframe for effective intervention, and the proficiency of the provider can greatly influence the accuracy of diagnosis and the subsequent plan for managing the condition.

In addition, **P1** is concerned about the methodology employed for diagnosis. This problem may pertain to the precision, dependability, and security of diagnostic equipment and processes. This statement acknowledges the importance of the diagnostic process in ensuring the overall efficiency of healthcare delivery. When it comes to hearing screening, the chosen approach must be sufficiently sensitive to identify even little or one-sided HI. If left untreated, such impairment can have an impact on the child's ability to develop speech and language skills.

P1 also raises concerns about the adequacy of the medical facility in terms of its modernity and hygiene. These worries suggest a more general worry about the framework in which healthcare is provided. Contemporary establishments furnished with cutting-edge technology might be seen as more proficient in delivering top-notch healthcare, but cleanliness is a vital issue that affects patient safety and confidence in the healthcare system.

The utilisation of the terms “modern enough” and “hygienic enough” by **P1** also underscores an anticipation for criteria that might not be uniformly fulfilled in all healthcare environments. **P1**'s willingness to engage in a screening programme indicates that they view modernity and hygiene as essential criteria for high-quality healthcare services.

The participant made it evident that the issues addressed are complex and encompass a combination of personal aspirations and society conventions surrounding the quality of treatment. In order to tackle these difficulties, HCPs and facilities must exhibit proficiency and uphold criteria that promote confidence among the population. HCPs should actively communicate with patients and carers, directly addressing their concerns and presenting evidence of their facility's skills and standards. Public health campaigns could enhance the population's knowledge of the significance of NNHS and the protocols implemented to guarantee excellence and safety in healthcare provision.

Addressing these issues is not solely about providing reassurance to individual parents such as **P1**; it is about constructing a strong and dependable healthcare system that is recognised as competent and trustworthy by all members of society.

Early diagnosis and intervention in preventive health measures, such as NNHS, are particularly crucial as they can significantly impact a child's development and have life-altering consequences.

PF3's narration shows a major obstacle in the provision of comprehensive hearing healthcare: the financial unavailability of preventative and regular services, including the inability to

acquire hearing aids. This issue is especially important as it addresses the connection between fairness in health and the wider factors that influence health.

“Majority of us are unable to afford the preventive and routine care necessary to prevent NHL; we can’t even afford hearing aids” **(PF3)**

The respondent’s use of the phrase “majority of us” entails a prevalent issue among the represented group, indicating that the economic restraints are not isolated occurrences but rather a systemic problem that impacts a significant portion of the community. These findings have significant consequences for public health, as financial obstacles can hinder the ability to obtain necessary healthcare treatments that are vital for identifying and preventing disorders like HL in newborns.

The inability to pay preventative care indicates a deficiency in accessible or adequate healthcare coverage or programmes that could enable access to such services without generating financial burden. Preventive care for HL is particularly important since promptly identifying and addressing hearing problems can greatly impact a child’s developmental path. Regular hearing screenings as part of routine care can promptly identify issues at an early stage, allowing for timely and successful therapies. Moreover, the explicit reference to the high cost of hearing aids underscores a significant deficiency in the availability of resources for individuals who are already suffering from HI. Hearing aids are an essential instrument for those with HI, enabling them to communicate more efficiently and participate more extensively in their surroundings. The exorbitant expense of hearing aids highlights the disparity in accessibility to essential medical devices, hence intensifying socioeconomic and health inequalities.

From the participant’s quote, it shows that there is a pressing necessity for governmental initiatives that can effectively tackle these economic obstacles. Possible interventions could encompass the establishment of universally financed hearing screening programmes for infants, the supply of cost-free or income-based sliding scale hearing aids, and the incorporation of hearing health into comprehensive health insurance schemes.

This viewpoint describes a situation where access to healthcare, including preventative measures and essential medical equipment, is dependent on an individual’s financial standing. This scenario is contradictory to the ideals of public health, which aim to achieve fair allocation of healthcare services and minimise health inequalities. The problem lies in not only enhancing the infrastructure and knowledge, as mentioned before, but also in ensuring that the economic

systems and regulations controlling healthcare supply do not hinder access to important health services.

4.5.3.4.3 Availability of Screening Facilities

Participants presented their perspectives on the structural, emotional, and informational barriers that shape parental decision-making and the broader challenges surrounding NNHS in Port Harcourt. The accounts collectively reveal a complex interplay between awareness, accessibility, healthcare quality, and trust, each exerting significant influence on how parents perceive and respond to screening and treatment for HL in children. The findings underscore that parents' choices are rarely made in isolation; rather, they emerge from a nuanced evaluation of practical considerations such as the safety, invasiveness, and reliability of medical procedures, as well as emotional and cultural factors that shape confidence in the healthcare system.

Participants **P14** and **P4** explore the complex decision-making process that parents go through when considering medical screening and treatment for their children's health conditions, specifically focusing on the setting of HL.

Participant **P14** narrates that parental decision-making is shaped by their comprehension of the ailment and the medical data that supports the effectiveness of treatment.

“Now, the way people see it will depend on how much the parents understand and how much evidence there is to show that such a case can be handled medically. It will also depend on the availability of facilities, how invasive the procedure will be, how safe it is for the child, and whether or not there will be follow-up care. So, when parents see that these things are possible and available, they will choose medical screening and treatment” (**P14**)

Having this information is essential as it influences the parents' perspective of the importance and effectiveness of medical interventions. The participant additionally acknowledges that the decision depends on the accessibility of medical facilities, the level of invasiveness of the proposed operations, the perceived safety for the kid, and the availability of follow-up care. This comprehensive perspective indicates that parents take into account a variety of issues, including both the practical aspects of care, such as the methods and locations available, as well as the emotional factors related to the child's welfare and comfort. When all these prerequisites are fulfilled, it is more probable that parents will be open to screening and treatment choices.

Participant **P4** emphasises the importance of having accessible facilities, while specifically highlighting the non-invasive nature of operations and the safety of the child, as well as the capacity to provide follow-up care.

“Availability of facilities; it will not be so much of an invasive procedure and it’s safe for the child and that follow-up care can be done. So, when parents see that these are available and are possible, then they will opt for medical screening and treatment option” (**P4**)

The inclusion of non-invasiveness and safety is crucial, as these factors are frequently paramount for parents when contemplating medical interventions for their children.

Providing reassurance that the procedures are minimally intrusive and prioritise the safety of the child might ease parental fears, hence increasing their likelihood of opting for medical interventions. Furthermore, the acknowledgement of follow-up care demonstrates a recognition of the imperative need for ongoing medical assistance, which is crucial in the management of persistent disorders like HL.

Both respondents emphasise that the level of knowledge and the perceived ease of access and safety of medical procedures are crucial factors in parental decision-making. The core idea is that parental decisions are not made alone but rather are impacted by an intricate interplay of information, assets, and emotional factors. These findings indicate that health promotion initiatives should focus on not only providing information about the medical aspects of HL but also on establishing practical and emotional support networks that can help parents make informed decisions regarding screening and treatment. Furthermore, these viewpoints emphasise the significance of health communication tactics that show understanding towards parental worries and emphasise the advantages of timely and ongoing healthcare in a way that aligns with family priorities for their child’s health and well-being.

HCP2 and **P2** offer valuable insights into the difficulties encountered when establishing NNHS programmes in specific areas, as well as the consequences of these gaps in healthcare provision.

P2 acknowledges their lack of awareness regarding the availability of NNHS in their location and expresses doubt about the situation in other regions.

“I don’t think NNHS is available in this area or in this part of the world. I don’t know of the other parts” (**P2**)

The presence of this ambiguity is significant as it indicates a deficiency in communication and the distribution of information regarding the accessibility of health care. It also indicates a possible inequality in the provision of health services across different locations, which can be related to uneven allocation of resources, varying health policies, or differing levels of healthcare infrastructure development.

These narratives together advocate for a multi-sectoral strategy to address the problem of HL. This strategy entails raising public awareness, guaranteeing the accessibility of screening facilities, and providing complete care routes. Additionally, they argue for the necessity of enhancing health systems, specifically in underserved regions, to foster fairness in healthcare accessibility. The viewpoints expressed here emphasise the necessity of focused public health strategies that prioritise the early identification and intervention of HIs as crucial elements of child healthcare services.

Participants **P14**, **P3**, and **P10** present a troubling depiction of the current condition of NNHS services from several perspectives, ultimately focusing on the topics of availability, awareness, and accessibility.

P14 recognises the presence of NNHS facilities but highlights a notable discrepancy in their usage.

“Yes, NNHS is available, but most people don’t use it because they don’t know about it. I’ve seen it in a few government hospitals and a few private hospitals, but it’s not easy for everyone to get to” (**P14**)

This gap can be linked to a deficiency in public awareness on the availability of these services, indicating a failure in health communication and education endeavours. **P14** emphasises the presence of accessibility challenges, indicating that geographical or socioeconomic factors may hinder the general people from easily accessing services. This suggests that although services may exist in theory, they are not equally accessible to all sectors of the population in reality, which is a significant concern in the field of public health.

The remark made by **P14** is very crucial as it implies that simply offering services is not enough; there is a paramount requirement for efficient tactics to enhance awareness and ensure that these services are easily available to everyone. This may entail implementing community education initiatives, incorporating screening information into current healthcare appointments, and tackling transportation or financial barriers that could hinder individuals’ access to healthcare facilities.

P3's statement highlights a prevalent occurrence in the field of public health: the obscurity of a service or problem as a result of its infrequency or the absence of extensive discussion surrounding it.

"I don't know but I don't think so because it is not a common thing. If it was common around here, I would have heard of it" (**P3**)

The lack of awareness regarding NNHS in their area indicates that the service may be extremely limited, not adequately promoted, or underutilised to the extent that it has not become widely recognised as a standard component of neonatal care. This indicates a necessity for stronger and more effective public health communication and community involvement in order to prioritise and raise knowledge about neonatal care services.

P10's response is blunt, suggesting a lack of NNHS facilities in their country, particularly inside university teaching institutions, which are often expected to provide advanced medical services and instruction.

"Not really because we do not have in our country and basically in the university teaching hospitals, we don't have that access to screening for HL for a child"
(**P10**)

The healthcare system's failure to address this issue creates a notable deficiency in its capacity to offer timely intervention for HL, which can greatly impact a child's growth and progress. The reference to university teaching hospitals is significant as these establishments are often expected to execute and distribute the most cutting-edge medical practices and teachings.

These viewpoints clarify a complex issue that includes the supply of services, awareness, and accessibility. They emphasise the necessity of adopting a comprehensive approach to enhance NNHS programmes, encompassing the establishment of necessary facilities, the execution of educational initiatives, and the elimination of obstacles to entry. It is essential to have policy reforms and allocate resources to ensure that NNHS becomes a standard and expected part of neonatal care in all healthcare settings.

4.5.3.4.4 Carelessness of Medical Professionals

The remarks made by participant **P12** shows a painful evaluation of the healthcare system, specifically addressing the perceived standard of care and the reliability of HCPs in the context of screening and diagnosing HL.

The initial quote discusses concerns about the potential for medical carelessness to worsen a child's health condition, highlighting a perceived danger of iatrogenic injury.

“Some doctors and nurses are so careless that they could make a child who isn't deaf deaf. But I don't know, so if I can see that my child will get the best medical help or diagnosis, then yes, I'm open to screening my child for HL”

(P12)

P12 indicates a willingness to consider screening for HL, but only if there is a guarantee of high-quality medical assistance. This highlights a crucial observation: the readiness of parents to participate in healthcare services is profoundly shaped by their confidence in the expertise and attentiveness of medical practitioners. The participant's mixed feelings indicate a wider worry about medical mistakes, which may result in a hesitancy to pursue preventative healthcare services like hearing screening. The lack of trust could provide a substantial obstacle to the adoption of these services, potentially leading to enduring repercussions on the health outcomes of children. **P12** further expresses a personal worry about the proficiency and diagnostic abilities of medical professionals in the second quote.

“Okay, I think my biggest problem will be not knowing how good the doctors and nurses are and how they make diagnoses” **(P12)**

This worry goes beyond the specific situation of HL and addresses the wider issue of ensuring the quality of healthcare. The proficiency of HCPs to precisely identify and treat medical disorders is the fundamental basis of efficient medical treatment, and any uncertainty in this domain can weaken the overall patient experience in healthcare.

Additionally, **P12** broadens the extent of the concern to a societal scale, indicating that the anxiety experienced by them is widely shared among several individuals in Nigeria.

“What I think will also be on the minds of a lot of other Nigerians because this problem affects everyone, and the incompetence of doctors and nurses is something everyone knows about. So, if everyone knows about it, they will probably all have the same worry or problem” **(P12)**

The collective concern regarding the proficiency of HCPs highlights a systemic problem that has the potential to impact the public's inclination to seek healthcare. The participant's claim that these issues of ineptitude are widely known implies a prevalent public discussion over the quality of healthcare, potentially undermining public trust in medical services.

P12 emphasise a crucial public health obstacle. Widespread apprehension regarding the quality of medical care can result in a widespread reluctance to use healthcare services, particularly crucial preventive measures such as NNHS. The ramifications of such a dynamic are significant: it can impede the timely recognition and treatment of health issues, leading to subsequent impacts on both individual and national health.

In order to tackle these challenges, it is crucial for healthcare systems to give top priority to the training and supervision of healthcare personnel to guarantee exceptional levels of treatment. Furthermore, it is imperative to establish open and honest communication and actively involve the community in order to restore public confidence. This may entail providing patients with information regarding the credentials of HCPs, the established procedures to guarantee patient well-being, and the systems in place to hold individuals accountable in case of medical mistakes. Restoring trust and promoting the adoption of preventive health services such as hearing screening requires a focused approach that addresses both the actual and perceived quality of healthcare.

The participants in this main theme, provided a valuable and sobering picture on the many hurdles that the healthcare sector encounters in providing and promoting NNHS services. The accounts from many stakeholders, which cover HCPs and parents, suggest a complex interplay of factors that influence health-seeking behaviours and the optimal management of HL. The prevailing concerns encompass a dearth of awareness and comprehension about HL and its ramifications, as well as budgetary and accessibility obstacles that hinder numerous families from pursuing early detection and intervention services. The presence of a widespread lack of faith in the proficiency and reliability of HCPs has become a major obstacle to the utilisation of accessible services, exacerbating these factors.

Moreover, the insights provided by the interviewees emphasise the societal and systemic aspects of the issue, indicating that individual reluctance to participate in hearing screening programmes is indicative of a wider apprehension regarding the condition of the healthcare system. The persistent demand for more focus on the advancement of hearing health, the availability of screening facilities, and the reinforcement of public confidence through improved healthcare quality and communication highlights an urgent requirement for comprehensive reform.

P12 then addresses the significant concern of trust within the medical system. It highlights the lack of faith among many Nigerians, who fear that HCPs may falsely diagnose them with non-existent illnesses or intentionally induce illnesses in order to extort money from them.

“I also think that many Nigerians don’t trust our medical system, so they think that if I go to a doctor, he’ll tell me I have an illness I don’t have or give me an illness I don’t have just so I can pay him a certain amount of money. So, I think many of them don’t trust; they’d rather put their trust in traditional doctors, traditional methods, or any other alternative method than in the medical side of things” (P12)

This viewpoint emphasises a deep scepticism towards the medical establishment, characterised by a concern about the possibility of incorrect diagnosis or manipulation for personal gain. The apprehension of misdiagnosis or the suspicion of deliberate harm for financial motives indicates underlying concerns regarding the trust and integrity of the healthcare system. The absence of trust can greatly discourage persons from obtaining medical treatment, causing them to favour traditional ways that they consider to be more reliable, even while there is no scientific evidence to back their effectiveness.

These participants have demonstrated that educational inequalities, availability of reliable information, and confidence in the healthcare system are crucial determinants that impact the tendency to seek healthcare in Nigeria. The analysis from P13, and P12 indicates that in order to enhance health outcomes and promote the utilisation of medical interventions, it is necessary to actively enhance public awareness regarding medical treatments, improve the accessibility of information, and restore trust in the healthcare system. This necessitates the implementation of both public health education campaigns and structural modifications to guarantee ethical behaviours inside the medical system, in addition to cultural sensitivity towards the beliefs and traditions that influence individuals’ healthcare decisions. These endeavours have the potential to close the divide between conventional and medical methods, resulting in a more cohesive and patient-focused healthcare.

Overall, the participants highlight the importance of implementing a well-coordinated and comprehensive strategy to tackle the challenges related to NNHS. This approach would encompass enhancing medical services and infrastructure, as well as implementing strategic health education programmes and policy-level activities to guarantee fair and equal access to healthcare. In order to promote a proactive approach to hearing health, it is necessary to make a focused attempt to restore confidence in the healthcare system, increase public knowledge, and reduce the financial hardships related to healthcare services. This comprehensive endeavour is crucial for establishing the foundation for enhanced health results and the general welfare of children with HL.

4.5.4 THEME FOUR (Parents): Promoting Access

In this theme, HCPs and parents, provided insights and viewpoints on different aspects of access to screening for HL in infants. Their narrations offer a comprehensive account of the current obstacles to efficient screening and the possible strategies for improving these healthcare services.

Recurring themes in this section include the general public's understanding, awareness, education and other benefits of NS for HL.

4.5.4.1 Importance of NS for HL

In this theme, the participants offer a comprehensive and diverse understanding of the perspectives, difficulties, and suggested remedies related to NS for HL. Every participant contributes a distinct viewpoint that jointly emphasises the crucial importance of promptly identifying and addressing hearing issues.

P1 and **P12** strongly agreed that comprehensive NNHS programmes are essential. The views expressed by both parents and professionals underscore the general public's perception of newborn hearing health.

P1 and **P12** expressed similar idea, and both are an example of parents reaffirming that it is every parent's duty to take part in NNHS programmes.

“Yes! Every parent should. There should not be any idea that HL is not my portion and all of that. Every parent should allow their newborn to be screened for hearing” (**P1**)

This statement tackles a potential cultural misconception or belief that “HL is not my portion” and could be a factor in why some choose not to attend these examinations. The participant is pushing for a shift in societal attitudes by addressing this notion head-on and making the case that HL has the potential to affect everyone and ought to be a concern for everyone. The usage of the phrase “and all of that” suggests that additional plausible justifications or urban legends that might discourage parents from getting early hearing evaluations for their children are being discounted. The parents claim highlights the necessity of educational programmes in the context of health promotion that address attitudes and beliefs that can discourage people from using available services in addition to the services' availability.

These quotes highlight a growing body of knowledge about the significance of NNHS, but they also raise concerns about structural and societal obstacles to its adoption.

Therefore, both quotations support the need for NNHS and advocate for all-encompassing measures to guarantee its implementation.

P13 provides incisive analysis on the significance of hearing screening based on their own experiences in their area of study as teacher. This declaration clarifies a number of important issues about early intervention techniques and hearing health.

“It’s important. In my field of study, I meet a lot of people who have trouble hearing. And I know that some of these problems wouldn’t have gotten as bad if they were dealt with early on. This is why screening is so important, especially for newborns. But screening isn’t just for newborns; everyone can go for check-ups from time to time to see not only how their bodies are doing, but also to see if they are at risk of losing their hearing” **(P13)**

First, the participant recognises that the people they deal with share a common set of hearing problems, indicating the frequency of HIs and the potential effects they can have on others. Early detection and care are vital, as evidenced by the belief that many hearing disorders “wouldn’t have gotten as serious if they were dealt with early on.” It emphasises how early intervention can lessen the degree of HL and the ensuing social and communicative difficulties.

In addition to giving context for the claim, mentioning the area of study implies that the participant has some level of knowledge or acquaintance with the difficulties faced by people who have hearing problems. Their support of screening, which emphasises the need of proactive rather than reactive health measures, is strengthened by this expertise.

Additionally, the participant advocates for routine auditory examinations throughout life, expanding the concept of hearing screening beyond infants. This expansion acknowledges that monitoring hearing health is a lifetime requirement, and that HL risk is not limited to the early stages of life.

A comprehensive approach to health screening is suggested by the reference to screening as a means of determining “not only how their bodies are doing,” but also the “risk of losing their hearing,” This quote captures the philosophy of all-inclusive healthcare, which holds that hearing is essential to total health. It recognises how many facets of health are interrelated and how HL can have an impact on other facets of life. The participant’s perspective captures the spirit of public health initiatives that use systematic screening programmes to prevent health problems, including HL, in addition to treating them.

P14 expresses a vision that focuses on the well-being and growth of children, with a particular emphasis on identifying and addressing HL and speech issues through early screening. This goal is in accordance with the concepts of preventive medicine and public health, recognising the significant impact of early childhood development on long-term health results.

“My goal is to make sure that every child grows up healthy, without HL or speech problems. It is important that every child goes through this screening, and I would like it to be part of our general assessment of children at birth or within the first two weeks of life, so that we can reduce the number of people in society who have HL” (**P14**)

The objective articulated by **P14**, implies a commitment to achieving comprehensive healthcare coverage and unrestricted availability of medical facilities. This concept which has also been commented by other participants is based on the recognition that children’s cognitive, social, and educational development can be greatly hindered by HL and speech difficulties. **P14** emphasises the significance of early detection by calling for the inclusion of screening in the general examination of children either at birth or within the first two weeks of life. Early therapeutic interventions during the neonatal period are crucial due to the child’s highly adaptable neural system, which offers the potential for significant advantages.

The final statement made by **P14**, is a practical and selfless goal. From a practical standpoint, it acknowledges the economic and social impact that unaddressed HL can have on both individuals and society.

Furthermore, the statements made by participants **P15** and **PF4** emphasise the necessity of conducting hearing screenings at different phases of growth, emphasising the significance of being attentive to hearing health from early infancy to childhood and possibly even during maternity. For example, **P15**’s statement acknowledges the need of hearing screening for both children and mothers, emphasising the need for screening if there are concerns about hearing or if one is experiencing early signs of hearing problems.

“But it is good every mother or growing up child or if you feel you are beginning to have an issue with your hearing, you should screen” (**P15**)

This demonstrates an awareness of the significance of women in identifying hearing disorders at an early stage, either in themselves or their children. This is particularly important because mothers are typically the main caretakers and are often the first to notice any delays or problems in development. Furthermore, the inclusivity of “every growing up child” demonstrates an understanding that hearing problems can occur at any stage of life, not only

in infants or early childhood, requiring continuous attentiveness. This viewpoint advocates for the proactive surveillance of auditory wellbeing, asserting the importance of conducting screenings in the presence of any observed alterations in hearing. Adopting this proactive strategy can result in the timely detection and management of hearing problems, which is crucial for minimising the long-term effects on communication, education, and overall well-being.

PF4's affirmation that,

“Yes, it important for every for every child whether newborn or a bit grown...but it is important for every child to screen” (**PF4**)

This underscores the necessity of regular screenings and the conviction that these screenings are crucial during all early developmental phases. The frequent use of the word “every” highlights a comprehensive approach, suggesting that all children, irrespective of their age, should undergo hearing examinations without any exceptions. The emphasis on inclusivity demonstrates a desire to establish hearing screening as a customary procedure in paediatric healthcare.

Both statements suggest a crucial public health message: the inclusion of hearing screening in regular health examinations for children as they develop is necessary. The recurrence and straightforwardness of the language employed by both individuals emphasise the seeming obviousness of this requirement, while they also indirectly draw attention to a disparity between current methods and the proposed perfection. These statements indicate that the participants agree that hearing screening should be widely used and considered a regular aspect of healthcare for all adults who are responsible for children, including mothers. However, it also implies that current health practices may not sufficiently meet the requirement for continuous hearing monitoring during the course of childhood growth. In order to achieve the goals outlined by **P15** and **PF4**, substantial funding may be necessary to support public health education, training for HCPs, and the development of healthcare policies that promote universal and age-appropriate hearing screenings.

4.5.4.2 Benefits of Early Detection of NHL

This sub-theme explores participants' perspectives on the essential role of early hearing screening in promoting holistic child health and well-being. The narratives reveal a shared understanding among participants that hearing is central not only to physical functioning but also to emotional, social, and developmental stability. Participants emphasise that undetected HL can have far-reaching implications, extending beyond communication difficulties to

encompass psychological distress, educational challenges, and social isolation. Consequently, they advocate for the integration of NNHS into standard neonatal care as a proactive and preventive health measure.

Participant **P2** emphasise the significance of holistic health and the influence of hearing on overall wellness, pushing for the integration of auditory screening as a fundamental element of health evaluations starting at a young age. **P2** asserts that there is a widespread longing for completeness in both physical and life encounters.

“Everybody would want to be sound in all areas or part of their body and every area in life. So, it is beneficial for the ears to be screened. So, you can live comfortably and avoid some emotional trauma” (**P2**)

The statement reflects the comprehensive character of well-being, where every facet of bodily functioning is interconnected and contributes to the overall standard of living. **P2** emphasises the wider consequences of auditory health by specifically focusing on the ears. It suggests that the damage of auditory health might go beyond physical incapacity and result in “emotional trauma.” This trauma might result from the difficulties linked to communication hurdles, social seclusion, and the vexation that frequently accompanies unaddressed hearing problems. Therefore, **P2** advocates for the importance of doing ear screening in order to maintain a high standard of living and reduce the likelihood of experiencing psychological anguish.

The second statement provides further details regarding the timing and justification for hearing screenings, emphasising the importance of initiating these screenings early after a child is born.

“Soon after giving birth every child should be screened for HL. As the health experts check every part of the body at birth to see their optimal functionality, I think the hearing aspect should not be overlooked, it should also be checked. So two weeks after birth, a child is supposed to be checked. It’s supposed to be checked from infancy” (**P2**)

P2 suggests that NNHSs should be performed within the initial two weeks, which is a crucial timeframe for identifying possible congenital problems that may affect a child’s growth and progress. **P2** contends that auditory health should be given equal consideration within the framework of comprehensive health assessments for newborns, in order to prevent any component of a child’s health from being overlooked.

P2's explicit statement that a thorough assessment of every aspect of the body is conducted at birth to ensure "optimal functionality" emphasises the necessity of extensive newborn inspections. HCPs should include hearing tests as a standard part of their general health evaluations for newborns. This addition would allow HCPs to promptly detect and deal with any HIs, so enabling actions that could avoid or reduce developmental delays.

However, **PF1** and **P1**, express a common worry about the significance of early hearing screening for newborns. They both recognise the possibility of congenital HL and the fact that this risk affects all children equally, without discrimination. **PF1** argues that parents have a sense of duty to safeguard their child's health and well-being, especially by employing early screening methods.

"I think as a parent if screening is done at the early stage of a child's life, then if there are issues with that child bothering on hearing, such could be easily detected. If the child is screened at the early stage of life, issues bothering on hearing will be easily detected and if detected, proper treatment or management will be instituted. That's my perception" (**PF1**)

The focus on "early stage" implies a recognition of the need of identifying and addressing health issues, particularly those connected to hearing, at an early phase.

This highlights the notion that timely screenings can effectively identify these issues. Timely identification is essential as it enables interventions to take place during a crucial phase of neural plasticity, when the child is most responsive to treatment. This has the potential to reduce or prevent the negative impact of HL on the development of speech and language, social interactions, and academic achievement.

P1's contribution expands the case for NNHS by highlighting its widespread applicability.

"Yes, it is because anybody is at risk of being deaf from birth; anybody's child is not whether you're rich or poor, or healthy or not it can happen to anybody. So, knowing that it can happen to anybody I will want to do the right thing, take my chances and go for screening as soon as my child is born and know if there is something I can do to help or to make the situation any better" (**P1**)

This assertion unequivocally underscores the fact that HI is a concern that surpasses socioeconomic or health-related disparities. **P1** advocates for a universal screening strategy that acknowledges the potential impact of HL on all individuals, rather than focusing on specific risk factors. This approach is rooted in the belief that everyone is equally susceptible to HL.

P1's proactive posture is driven by this comprehension, leading them to prioritise "doing the right thing," This demonstrates their dedication to taking preventative measures by choosing to undergo hearing screening shortly after their child is born. **P1**'s expressed intention to take action promptly demonstrates a sense of urgency and a recognition of the importance of health screening in their capacity as a career.

The willingness to "take my chances' according to the participant indicates an acknowledgement of the inherent uncertainty of health difficulties and a recognition of the importance of actively managing one's health. The strategy represents a proactive and optimistic stance, suggesting that taking action early on can potentially alter the course of the child's life in a positive manner.

Both **PF1** and **P1** acknowledge the importance of early hearing screening as a crucial component of newborn care. Their observations emphasise the imperative for healthcare systems to adopt universal hearing screening regimens as a customary procedure. Implementing such standards would allow families to swiftly address any hearing difficulties, resulting in improved health outcomes. However, addressing this demand involves overcoming hurdles such as ensuring that screening programmes are accessible to all parts of the community and providing sufficient resources for follow-up treatment. Additionally, it advocates for the implementation of public health education programmes to enhance parental and carer understanding of the need of promptly identifying and addressing HI.

4.5.4.3 Improving NS for HL

This sub-theme examines the need of increasing public awareness and strengthening healthcare facilities in order to enhance NS for HL. The observations from the participants, particularly **P1**, emphasise the necessity for strong advocacy and enhancement of healthcare services that are on par with immunisation programmes. This strategy is essential as it not only enables the early identification and prevention of HL in babies but also guarantees that these measures are deeply embedded in public health policy and practice.

The participants also highlight the enhancing of health services to promote the adoption and execution of NNHS. **P1** establishes a comparison between the public health initiatives aimed at immunisation and the necessity for comparable endeavours to advocate for HL screening.

"like I said, the awareness should be there, should be out there, that there is something like this going on, just the same way they campaign for immunisation, I think it's the same way they should also campaign for screening for HL, NS for HL, maybe because they've not really taken it serious that's why

many parents feel it's not necessary, okay; so there should also be proper medical aids, whatever they need to screen very well and get the right result. Is an area I think the government should look at, because I think it's something they've not really given much attention much to my knowledge" (**P1**)

This comparison is powerful; it highlights the effectiveness of immunisation awareness efforts and implies that if NNHS were promoted with same intensity, it may gain more acceptance and acknowledgment of its importance among parents. The participant identifies a deficiency in the public health messaging, where the gravity of HL is not effectively conveyed or comprehended by parents, potentially resulting in a lack of prioritisation. **P1** emphasises the importance of

'appropriate medical tools "and resources to enable precise screenings, indicating that the success of a screening programme depends not only on how it is carried out but also on its ability to provide dependable outcomes.

P1's assertion that this issue warrants government attention indicates their conviction that policymakers have the responsibility to prioritise NNHS as a matter of public health. The inclusion of "to my knowledge" at the end of the initial sentence suggests a subjective perspective that acknowledges the potential existence of unrecognised efforts or a lack of visibility in the existing endeavours.

The second statement by **P1** strengthens the idea of enhancing health care by explicitly connecting it to the efficacy of NS programmes.

"Okay fine. If health services are improved, it will definitely affect the part of screening for newborns. So, I think that's where it starts, when it starts from there definitely, there would want to be creation of awareness about it. When people get to see the importance of doing it, many persons will do it, they would opt for it" (**P1**)

P1 contends that improved healthcare services would have a beneficial effect on the screening process for babies, likely by offering superior accessibility, quality, and posttreatment care. It also suggests that enhancing health care serves as the fundamental catalyst for broader transformations, encompassing heightened consciousness. **P1** argues that knowledge and perceived importance are inherently connected to the adoption of something. The belief that when individuals comprehend the significance of engaging in NNHS, a considerable number of people will choose to participate, indicates an optimistic perspective that highlights the natural inclination to do so once the advantages are recognised by the public. This viewpoint

emphasises the significance of education and the spread of information in altering public behaviour.

It becomes clear that there is a complex interaction between awareness, the quality of health services, and policy. **P1** recognises the necessity of a comprehensive transformation that encompasses government intervention, public health advocacy, and improvement of healthcare services. This transformation is perceived as a comprehensive strategy that encompasses the provision of essential infrastructure and resources for efficient screenings, as well as the dissemination of knowledge to the public regarding the significance of early identification of HI. A coordinated effort is needed between health authorities, lawmakers, and the community to enhance infant health outcomes by integrating hearing examinations into normal neonatal care.

Participant **P13** examines the possibility of enhancing healthcare services in Port Harcourt, particularly with regards to the compulsory screening of infants for HI. The participant proposes a dual strategy to accomplish this enhancement. Firstly, according to **P13**, improving healthcare services in Port Harcourt could lead to the requirement of mandatory newborn hearing testing.

“If health services in Port Harcourt get better (1) this screening for newborns can be made mandatory, just like some things have to be done after a baby is born; screening for newborns can also be made mandatory. So that’s just one way to make the health care in Port Harcourt better. (2) People who work in health care should also stress how important this is. They can do this only if they have the right tools. So, even if they raise awareness, the goal won’t be reached if the facilities aren’t there. And the goal can only be reached by making health services better. So, they can get better by putting the facilities in place. Once the facilities are in place and people know about the problem, it can be fixed” (**P13**)

The reference to established protocols that are already mandatory after childbirth suggests a conviction that specific healthcare interventions should be standardised based on their demonstrated advantages. **P13**’s proposal of mandatory screening is in line with public health principles that prioritise preventative treatment as a strategy to proactively address any future health problems. Proposing mandatory implementation of these screenings is advocated as a tactic to enhance the overall quality of healthcare, suggesting that integrating these screenings into routine newborn care would align with and promote the improvement of the healthcare system’s quality.

Furthermore, **P13** underscores the significance of HCPs in emphasising the crucial nature of NNHS. The declaration recognises that although it is important to increase awareness, the effectiveness of these efforts depends on having the appropriate resources, such as necessary equipment, skilled staff, and screening and follow-up treatment processes. This demonstrates the recognition that simply being aware of something is not enough to achieve the desired result unless it is accompanied with the real ability to provide the necessary service. The participant highlights that improving health services is the sole means of achieving the aim, indicating a larger systemic problem that goes beyond the issue of screening alone. This statement emphasises the importance of having a robust healthcare system as the basis for successful health initiatives. **P13's** plan for improvement involves allocating resources to acquire the necessary infrastructure for screening and guaranteeing that once established, together with increased public awareness, the challenges related to neonatal HL may be properly resolved.

From this quotation, it is evident that there is a comprehension of the intricacies associated with enhancing healthcare. There is an acknowledgment of the interconnected relationship between policy, practice, and public education. Enforcing mandatory hearing exams for newborns would necessitate legislative intervention and commitment of resources. Equipping healthcare personnel with the appropriate instruments requires a financial commitment, training, and even reorganising certain aspects of the healthcare delivery system to accommodate these checks. The inclusion of the term “fixed” at the conclusion of the sentence portrays a sense of optimism and a mindset that is focused on finding solutions. **P1's** belief in the healthcare system's potential for change and progress is indicated, provided that the appropriate strategy and resources are utilised. The participant's perspective demonstrates a thorough comprehension of the necessary measures to enhance healthcare outcomes. This encompasses various aspects such as policy reforms, improvements in healthcare infrastructure, and the crucial involvement of HCPs in educating and involving the public.

Additionally, **P15** and **P4** offer valuable perspectives on the sense of urgency and the need for a comprehensive, multi-sectoral strategy in the health sector, specifically in relation to practices related to hearing health.

“So, I think the health sector need to take it seriously or they need to consider it in any way there is any organisation that would help because one thing I know is that most of this practise if they are not being pushed, it's not going to be taken seriously, so they need to be pushed” (**P15**)

P15 underscores the imperative for the health sector to address the matter of hearing health with sincerity and dedication. The view that activities in the health sector necessitate assertive efforts to be regarded seriously suggests a fear that without proactive and unwavering advocacy, hearing health may not be given the recognition it merits. This highlights a broader problem within healthcare systems, where particular health practices may not receive sufficient attention or priority until there is pressure from internal stakeholders or other entities. **P15** implies that in order to overcome inertia and secure the adoption of important practices, there needs to be a coordinated effort or a push from relevant entities, such as organisations with a vested interest in public health or those that can offer support to the health sector.

P4's contribution elaborates on this concept by presenting a thorough plan for improving hearing health practices.

“Adequate awareness and public sensitisation programmes; collaboration between governments and civil organisations on the provision of the well-equipped facilities; enactment and implementation of favourable health policies amongst others” (**P4**)

This emphasises the necessity of educational endeavours aimed at enlightening the public about the significance of auditory well-being. **P4** promotes a partnership approach by emphasising the importance of collaboration between governments and civic organisations. It suggests that addressing hearing health issues should not be only the responsibility of the government but rather requires combined efforts with nongovernmental entities. This has the potential to result in the consolidation of resources, the exchange of specialised knowledge, and the expansion of influence and effectiveness. The participant also acknowledges the significance of infrastructure in efficiently managing and addressing hearing health concerns. In the absence of adequate infrastructure, even the most well-meaning health initiatives may prove

ineffective.

P4 also addresses the legislative dimension, suggesting that in addition to the required infrastructure and public knowledge, there is a requirement for supportive policy frameworks that officially create and govern activities related to hearing health.

Both **P15** and **P4** acknowledge the importance of including advocacy, awareness, infrastructure, and policy in order to bring about necessary changes in the health system, particularly in areas like hearing screening. This comprehensive approach recognises that each of these components has a crucial role in influencing health results. Nevertheless, the

implementation of these extensive methods presents notable obstacles, necessitating the cooperation of several sectors, allocation of resources, and persistent endeavours to change public and professional perspectives on the significance of hearing health. **P4**'s usage of the phrase "amongst others" suggests that there are other undisclosed elements that contribute to the enhancement of health sector procedures, highlighting the intricate nature of the issue.

4.5.4.4 Public Education and Awareness for NS for HL

This section explores the essential role of public education and awareness in improving NS for HL. The findings obtained from qualitative interviews with different stakeholders emphasise a unanimous agreement on the need for more public awareness and involvement in this field. The conversations have shown that the fundamental premise is that persons who are well-informed are more inclined to take part in and gain advantages from early screening activities.

The perspectives of participants **P11** and **P9** who are parents are crucial for comprehending the wider ramifications of public perceptions on health behaviours, specifically with NNHS.

Participant **P11**'s initial quote implies that the government and health sector stakeholders should take an active role in spreading knowledge regarding HL screening.

"One, I think the government or those in the health sector and relevant stakeholders need to educate the populace. We must be educated; they need to tell us what screening for HL is all about, tell us the benefit and then encourage us" (**P11**) The participant highlights the importance of educating individuals on the process and advantages of HL screening, as well as urging them to actively seek out and participate in the screening process. This statement emphasises the crucial importance of authoritative and knowledgeable institutions in public health education, because being well-informed is the first step towards taking action. This suggests a deficiency in existing public health communication tactics, emphasising the need for focused and easily understandable information campaigns that not only provide knowledge but also inspire the population to actively take measures for their well-being.

Participant **P9**'s quotation highlights the impact of public perception on the adoption of health initiatives.

"Positive perceptions encourage screening for HL while negative perceptions will discourage it. So, people must be educated on the importance of early detection of the condition which can only be done through screening" (**P9**)

The statement suggests that having a favourable outlook on HL screening can result in higher levels of engagement, whereas having a negative outlook may discourage participation. This underscores the need of moulding public opinion through education, proposing that awareness programmes should not just provide knowledge but also tackle and modify any prevailing misunderstandings or doubt. The reference to “early detection” emphasises the preventive capacity of screening and highlights education as a crucial instrument for encouraging timely health-seeking behaviours. This statement emphasises the need of health promotion efforts that prioritise the early identification of HL, as this is crucial for successful intervention and management of the condition.

Both participants advocate for a strong educational framework that can transform public beliefs and result in greater participation in HL screening programmes. They emphasise the necessity of implementing tactics that surpass the simple act of providing information. These strategies should strive to create a nurturing environment that motivates and empowers individuals to actively seek out screening services.

P1 highlights various crucial facets of healthcare, specifically pertaining to NS. The participant emphasises the importance of raising awareness among mothers, indicating a lack of understanding of the details of NS.

“Okay, I think they should be creation of awareness; mothers should be able to know what NS is. The doctors and nurses should be careful. I think they should be trained, if there are no modern facilities to get these things done, the government should provide modern up-to-date equipment that need to work with and they should be trained properly, yeah, I think that’s pretty much” (**P1**)

This highlights a deficiency in communication and education that must be addressed in order to guarantee that mothers are well-informed and actively involved in the health of their newborns. Additionally, **P1** emphasizes the importance of HCPs, particularly doctors and nurses, stating that they must carry out their responsibilities with careful attention. This highlights the significance of accuracy and caution in managing babies throughout the screening procedures, which are crucial for early identification of possible health problems.

P1’s call for training indicates that they acknowledge a possible deficiency in the healthcare staff’s level of professional growth, particularly in regard to the methods and intricacies of NS. Training is emphasised as an essential necessity to ensure that medical personnel are skilled and current in the most recent techniques and standards in neonatal healthcare.

In addition, **P1** discusses the healthcare infrastructure and highlights that the lack of contemporary facilities and equipment can impede the effectiveness of NS. The focus on the government's responsibility to provide equipment demonstrates a wider view on institutional responsibility and the necessity of investing in healthcare resources. This statement suggests that well-trained HCPs are unable to provide high-quality healthcare services if they do not have the necessary equipment.

The interviews in this section highlighted a link between public education and the effectiveness of NS programmes. Participants strongly support a comprehensive educational framework that not only provides information but also actively involves the public in health practices. The imperative to correct misunderstandings and improve the availability of reliable information arises as a vital topic. These observations necessitate a collaborative endeavour by governmental entities, HCPs, and community influencers to cultivate a setting where the early identification of hearing disorders through screening is not only accepted as the norm but actively promoted. By implementing this measure, it would guarantee that every sector of society comprehends the significance of and engages in NS, ultimately resulting in improved health results and a decrease in avoidable HI.

4.5.4.5 Improving Healthcare Facilities

The central focus of this sub-theme by the participants is to improve the physical structures and services in healthcare settings in order to effectively and efficiently support and optimise programmes for screening the hearing of newborns. The participants, both parents and HCP highlight the clear connection between the calibre of healthcare services and the level of public involvement in these examinations. They contend that improvements in healthcare infrastructure might greatly impact parental inclination to engage in such initiatives by establishing trust and showcasing the effectiveness of early health treatments. This issue examines the importance of enhanced healthcare facilities, as well as efficient communication and legal backing, in promoting the adoption of NNHS and assuring its effectiveness. During this conversation, the participants emphasise the necessity of a comprehensive strategy that integrates improvements in infrastructure, educational initiatives, and policy enforcement in order to create a proactive healthcare environment that promotes early identification and prevention of HL in neonates.

Participant **P3** suggests that improving healthcare services would have a direct impact on people's willingness to participate in screening programmes.

“If healthcare services are improved, everybody would want to partake or participate in such screening if it is improved. Because they may feel that it is not up to parents that’s why they are not even involved in the first place” (**P3**)

The fundamental premise here is that existing perceptions of insufficient healthcare can discourage engagement. **P3** posits that parents may presently be reluctant to engage due to a perception that the current healthcare offerings are not ideal. **P3**’s implication suggests that there exists a certain level of care and service that is anticipated but is not fulfilled, resulting in a diminished level of confidence or belief in the healthcare system.

P7 further develops the concept of enhancing healthcare services by placing emphasis on the dissemination of information.

“If health services are improved, parents and guardians will be well equipped with necessary information that will enable them to make informed decisions as regards screening of their children and wards for HL” (**P7**)

P7 asserts that improved healthcare services not only provide vital information but also empower parents and guardians to make well-informed decisions about their children’s health, particularly in relation to screening for HL. This indicates a dual requirement, the strengthening of the existing healthcare services and the improvement of health education and communication initiatives to guarantee that parents and guardians comprehend the significance and practicalities of NS. Ultimately, **P11** supports using legislation to guarantee that parents are included in NS programmes.

“So, if they can enact some laws that a child must be screen for HL soon after birth and make it mandatory, it will help. So, enacting laws and implementing them will minimise HL while encouraging the screening exercise” (**P11**)

The proposition that legislation should be passed to enforce mandatory screening soon after birth, and more crucially, executed with efficiency, addresses a systematic approach to address HL. The perspective of **P11** implies that although it is preferable for individuals to participate willingly, it may be necessary to pass and enforce legislation in order to ensure universal compliance with screening and ultimately reduce the occurrence of HL.

Together, these viewpoints suggest a complex approach to enhance the adoption of NS. The suggestion is to enhance both the healthcare services themselves, in terms of quality and information provision, and the legislative structure that regulates these services. Widespread and regular involvement in NNHS programmes will only occur when parents have trust in the

healthcare system, possess knowledge about the processes and advantages, and have assistance from laws.

PF1's narration highlights other component of the screening process - the incorporation of individuals with HIs into society. This participant has witnessed the social and communicative challenges experienced by individuals, including children and adults, who have HIs. They acknowledge the negative impact this often has on their ability to fully integrate into society.

"I will strongly recommend that NS for HL be advocated, implemented and ensured in our healthcare delivery system because I have seen children and adults who are hard of hearing and speaking and most times they are not integrated as into the society as it should be" (**PF1**)

PF1 emphasises the need of promoting, implementing, and guaranteeing the presence of NNHS in the healthcare system. The suggestion to make sure that these tests are a customary component of healthcare demonstrates a goal not simply to enhance individual health results but also to cultivate a society that is more inclusive towards those with HI. The perspective of this participant is based on the social challenges experienced by individuals with HIs and the belief that identifying and addressing these issues at an early stage can enhance social inclusion and improve overall well-being.

In support, Participant **P7** provides a strategy plan for improving NNHS in this interview clip, emphasising the involvement of the government, insurance companies, the media, and legislation. **P7** highlights the significance of establishing public awareness as a duty of the government.

"If the government create public awareness; if they get insurance companies, media and government to understand this kind of programme would benefit the whole country. So understanding that if they put a little as \$5 per infant screening can prevent the loss of intellectual ability in a child who will be dependent on the system. It will encourage the legislative enactments of laws and policies that will make screening for HL mandatory for all infants and if they can provide advertisements to help to disseminate information about the programme, it will also help" (**P7**)

The participant proposes that having well-informed knowledge can result in comprehending the advantages of nationwide hearing screening programmes. **P7** also highlights the significance of insurance companies and the media in this process, indicating that their participation is essential for the wider distribution of information. **P7** suggests that by

presenting the cost of screening as a small investment, with a starting price of only \$5 per infant, the benefits of implementing such a programme, such as averting a decline in intellectual capacity and reducing future reliance on the system, are significantly greater than the associated costs. This cost-benefit analysis aims to convince stakeholders of the economic and social benefits of investing in early screening for HL.

P7 regards advertising as a crucial means of disseminating information about the programme. Through the utilisation of commercials, the program's efficiency might be enhanced by reaching a broader audience and conveying the message regarding the significance and accessibility of NNHS.

P7's observations demonstrate an understanding of the complex nature of public health programmes. These initiatives involve various factors such as awareness, economic incentives, legislative backing, and media dissemination, all working together to promote and implement a complete NNHS programme.

Participant **PF1** provide valuable insights into how to improve the adoption of NNHS through educational initiatives, policy changes, and training programmes. **PF1** argues that parental education regarding NNHS is crucial and proposes that mandating such screening could substantially decrease the negative consequences linked to undiscovered HL in infants.

“When parents are aware there is such a test called NS for HL, and it is made compulsory for every child soon after birth, then it would minimise the negative consequences of not screening newborns for HL” (**PF1**)

The participant suggests that awareness alone may not be enough to guarantee universal screening, and that policy action is required. Mandatory screening could function as a proactive measure against the enduring adverse consequences of HI, such as delays in speech and language development, social seclusion, and difficulties in education. By implementing mandatory screening, it is expected that early identification and subsequent therapies can become standard practice, thereby enhancing overall child health outcomes and alleviating the impact of HL on individuals and society.

P4's contribution shifts the attention towards the timing and causes of malformations, highlighting that harm can happen from fertilisation until intrauterine life, thus emphasising the uncertain and intricate nature of congenital disorders.

“It could start from health information or health education; awareness programmes and the need for parents to know that deformity can occur at any

time in a child's life from fertilisation to intrauterine life, there could be a reason for injury at some time. So, if this screening is readily available, accessible and affordable as well as training of healthcare personnel as regards this procedure can effectively minimise the occurrence of HL in neonates and young children"

(P4)

This underscores the imperative for prompt and uninterrupted screening, commencing from the earliest phases of life. **P4** emphasises the necessity of making screening easily accessible, widely obtainable, and financially feasible, highlighting the significance of eliminating obstacles to healthcare. Ensuring that all segments of the population can benefit from these services is dependent on the accessibility and cost of those services. In addition, **P4** emphasises the need of training healthcare staff, highlighting the notion that the effectiveness of screening programmes relies heavily on the competence of those who carry them out. Efficient training may guarantee that HCPs possess the necessary expertise to promptly identify HI, which is crucial for reducing its prevalence in newborns and young

individuals.

Both participants indicate that tackling neonatal HL necessitates a comprehensive strategy that encompasses government funding, public awareness campaigns, and HCP education, rather than relying on straightforward solutions. This comprehensive strategy emphasises the need for a well-rounded approach to establish NNHS as a regular and efficient practice, ultimately resulting in improved health outcomes for children and alleviating the impact of HL on people and society.

Participant **P7** provides a strategy plan for improving NNHS in this interview clip, emphasising the involvement of the government, insurance companies, the media, and legislation. **P7** highlights the significance of establishing public awareness as a duty of the government.

"If the government create public awareness; it they get insurance companies, media and government to understand this kind of programme would benefit the whole country. So understanding that if they put a little as \$5 per infant screening can prevent the loss of intellectual ability in a child who will be dependent on the system. It will encourage the legislative enactments of laws and policies that will make screening for HL mandatory for all infants and if they can provide advertisements to help to disseminate information about the programme, it will also help" **(P7)**

The participant proposes that having well-informed knowledge can result in comprehending the advantages of nationwide hearing screening programmes. **P7** also highlights the significance of insurance companies and the media in this process, indicating that their participation is essential for the wider distribution of information. **P7** suggests that by presenting the cost of screening as a small investment, with a starting price of only \$5 per infant, the benefits of implementing such a programme, such as averting a decline in intellectual capacity and reducing future reliance on the system, are significantly greater than the associated costs. This cost-benefit analysis aims to convince stakeholders of the economic and social benefits of investing in early screening for HL.

In addition, **P7** supports the idea of passing laws, arguing that by recognising the advantages of hearing screening for society, it will motivate the development and implementation of legislation that requires mandatory screening. The requirement for compulsory screening is a public health approach designed to guarantee that everyone has equal access to this crucial method of early detection. **P7** regards advertising as a crucial means of disseminating information about the programme. Through the utilisation of commercials, the program's efficiency might be enhanced by reaching a broader audience and conveying the message regarding the significance and accessibility of NNHS.

P7's observations demonstrate an understanding of the complex nature of public health programmes. These initiatives involve various factors such as awareness, economic incentives, legislative backing, and media dissemination, all working together to promote and implement a complete NNHS programme.

Participant **P5** offers an individual viewpoint on how health communication and professional training influence the level of acceptance among parents about NNHS.

P5 recognises that knowledge, campaigning, and public sensitisation are crucial elements that can contribute to a broader acceptability of neonatal HL screening.

“Creating the much-needed awareness, advocacy, public sensitisation and training of medical staff as regards NS for HL will definitely help. this is my second child and if I go the hospital and I'm told they want to do such test, I would not object it if I am aware of such test earlier” (**P5**)

The participant recognises that the presence of these components would probably result in a favourable response from parents. **P5** emphasises that resistance to these tests is not always based on objection to the screening itself, but rather on a lack of prior knowledge. **P5's** remark suggests that if parents are not given sufficient knowledge in advance, they may be

unprepared and reluctant or unwilling to accept crucial health interventions for their children. The participant's mention of training medical professionals indicates their recognition of the significance of healthcare delivery quality. **P5** acknowledges the correlation between the proficiency of HCPs and its impact on patient confidence and the standard of treatment provided. In order for health programmes to achieve success, it is essential to have a knowledgeable and skilled medical team that can effectively convey the importance and advantages of procedures such as NNHS. **P5** prioritises a healthcare system that proactively and compassionately involves patients, ensuring that parents are well-informed and at ease with the care their children get. Furthermore, it suggests a recognition that parental collaboration is more easily obtained when they are actively involved in the healthcare process, including being told well in advance of any necessary decisions.

P9, P1 underscore the crucial importance of promoting awareness, providing training, involving the government, and ensuring accessibility in the context of early screening for HL in children. The participants bring attention to various facets of the potential requirements for an efficient screening programme, pushing for systemic modifications to improve public health outcomes. Participant **P9** emphasises the importance of government action in organising awareness campaigns and ensuring the availability of hearing screening facilities.

“Government should be involved, and awareness programmes being designed and carried out to enlighten the public on the importance and benefits of early screening for HL in children. Also, such services should be made easily accessible and affordable by all and sundry” (**P9**)

P9 asserts that the government should play a role in implementing awareness campaigns aimed at educating the public about the significance and advantages of early screening for HL in children. Furthermore, it is crucial to emphasise a parallel focus on ensuring that such services are readily available and affordable to everyone. First and foremost, it emphasises the need of governmental leadership in public health programmes, which can enable extensive dissemination of knowledge regarding the advantages of early identification of hearing problems. According to **P9**, it is essential to address undiagnosed hearing problems promptly to minimise their long-term effects. Furthermore, **P9** advocates for the democratisation of health services, aiming to make them affordable and easily accessible. This entails ensuring that no demography is deprived of vital care owing to financial restraints or geographical limitations.

Participant **P11, PF4** and **P13** offered insights into various crucial factors influencing the implementation of NNHS programmes, with a primary focus on awareness, stigma, financial

limitations, inadequate facilities, and disparities in practices between developed and developing nations. Every participant offers a distinct viewpoint that, when combined, forms a thorough understanding of the various complex obstacles that must be tackled in order to enhance the early identification of HI in children.

“First, is that it’s not so known. So, the awareness is not there. Second, is the stigmatisation associated with the condition. And third may be due to financial constraint because most of us are from humble backgrounds, so if screening for NHL may be for a fee, most persons may not afford and that’s why they stay back or look for alternative which to them may be much cheaper than screening at the hospital” (P11)

Participant **P11** identifies three main obstacles to achieving efficient hearing screening for neonates, this highlights the broader socio-economic and cultural factors that hinder the adoption of such screenings. First and foremost, the absence of awareness indicates a notable deficiency in public health education and outreach. Furthermore, the negative perception linked to HI can dissuade families from pursuing diagnosis or treatment for their children, due to concerns about being socially marginalised or facing prejudice. Lastly, the financial restriction is significant, especially in economically disadvantaged places, where the expense of screening can be prohibitive, causing families to either forgo these essential services or seek less dependable alternatives.

Additionally, participant **PF4** also highlights the significance of HCPs in promoting screening programmes. According to **PF4**, individuals often only take action when they are informed about specific matters.

“Most persons until they are being told about certain things that’s when they do it, so maybe because they’ve not been told and maybe there is no facility for it and so whenever they visit health centres, the health givers don even mentions it. the first thing is training people and creating awareness and then from there developing facilities to start practicing it” (PF4)

This viewpoint emphasises a fundamental problem in healthcare settings, where the lack of adequate facilities and insufficient proactive communication from healthcare personnel lead to missed chances for early identification of HL. The proposed solution, as suggested by **PF4**, involves educating healthcare personnel to enhance their interaction with patients regarding the accessibility and advantages of hearing screenings. Additionally, it entails expanding the necessary infrastructure to facilitate the provision of these services.

Participant **P13** highlights the disparity between the practices in rich countries and the possible practices in developing countries by emphasising the regularity of NSs in wealthier nations.

“Okay, I think that can be done. For example, in developed countries, babies are checked for HL right after they are born. If that is being done, I think that can be seen as a way to prevent HL. So, it’s important to test newborns for HL. This will help solve the problem” (**P13**)

P13’s comment proposes that emulating the methods of industrialised countries, where newborn hearing checks are a routine procedure, could be a viable approach to enhance health outcomes. The underlying implication here is that regular and systematic screening can serve as both a preventive measure and an early intervention technique that effectively reduces the negative effects of HL on children’s development.

These observations emphasise the importance of implementing comprehensive programmes that tackle both the medical and social aspects of preventing HL in neonates. They advocate for intensified awareness efforts, the decrease of social stigma, the supply of accessible healthcare, the training of HCPs, and the enhancement of medical facilities. By addressing these challenges, communities and healthcare systems can strive for healthcare practices that are comprehensive, efficient, and focused on prevention.

Overall, the participants in this theme demonstrate a unanimous agreement regarding the necessity of implementing a comprehensive strategy to improve NNHS programmes. This approach should incorporate strategic awareness efforts, cultural sensitivity to address stigma, economic assistance for disadvantaged families, and significant

enhancements in healthcare infrastructure and professional education. By focusing on these crucial domains, healthcare systems can achieve substantial progress in the prevention and treatment of HI in newborns, ultimately resulting in improved health results and an enhanced standard of living for affected children and their families.

4.6 Triangulation of Findings Between Parents and HCPs

The integration of findings from both parents and HCPs reveals a complex and multifaceted understanding of NNHS in Port Harcourt, Nigeria. Through triangulation, it becomes apparent that while both groups recognise the importance of early detection of HL, they approach it from different epistemological and experiential standpoints. Parents view screening primarily through the lens of awareness, accessibility, and personal or cultural belief systems, whereas HCPs focus on systemic barriers, technical challenges, and the need for evidence-based

integration of screening within existing healthcare structures. The triangulated analysis demonstrates areas of convergence, divergence, and complementarity that illuminate the broader socio-cultural and institutional dynamics shaping the implementation of NNHS.

From the parents' perspective, limited awareness emerged as a major barrier to the acceptance and uptake of NNHS. Most parents admitted to having little or no knowledge of the procedure, acknowledging that while it was common in Western countries, it remained largely unfamiliar within their local context. For example, participants such as P1 and P12 explicitly stated that "I know very little about it... it is common in the western world but not so common here," reflecting a widespread information gap. Similarly, P13 observed that "I have never seen it done... I haven't heard of it being done where I live." These accounts underscore a profound absence of exposure and information dissemination within local health systems, suggesting that health literacy about hearing screening is heavily dependent on geographical and infrastructural contexts. The HCPs confirmed this knowledge gap, identifying poor awareness campaigns and insufficient training as fundamental weaknesses within the health system. HCPs emphasised that parents' lack of awareness was not a product of indifference, but rather a reflection of structural inadequacies, including limited-service provision, absence of public health education, and poor health communication.

Furthermore, triangulation reveals that both parents and HCPs perceive accessibility and affordability as key determinants in healthcare decision-making. Parents consistently identified economic constraints as influencing their choices, echoing **HCP4**'s observation that "most parents will readily exploit the traditional care pathway because it is cheap, accessible, perceived to be 100% safe, and aligns with their belief systems." This alignment between parental experiences and professional observations underscores how socioeconomic realities directly shape health-seeking behaviour. The preference for traditional methods, as noted by both groups, arises not merely from cultural loyalty but also from pragmatic considerations such as proximity, cost, and perceived safety. HCPs expressed concerns that such perceptions could undermine public health interventions, especially when traditional treatments are pursued without proper regulation or clinical validation. While parents often view traditional care as an extension of cultural continuity, HCPs regard it as a competing, unregulated parallel system that poses safety risks due to lack of standardisation and clinical oversight.

The triangulated findings also highlight shared recognition of the potential benefits of early hearing screening. Parents such as P6 and P7 articulated an intuitive understanding that screening facilitates early identification and management, with P7 remarking that "when HL is found early, the baby can get help for his/her speech development." This reflects an

awareness, albeit partial, of the developmental advantages associated with early detection. HCPs equally underscored the clinical necessity of early screening, viewing it as central to preventive healthcare and long-term rehabilitation outcomes. HCPs like **HCP4** and PF2 acknowledged that early intervention can prevent speech delays and enhance social integration. Thus, both groups converge on the belief that early hearing screening is beneficial, though the professional emphasis is grounded in evidence-based rationale, while the parental stance is driven by intuitive and experiential reasoning.

A significant point of divergence lies in the perception of risk, safety, and trust in healthcare systems. Parents' confidence in the medical establishment appears compromised by pervasive mistrust and fear of malpractice. Participants such as P12 expressed anxiety that "some doctors and nurses are so careless that they could make a child who isn't deaf become deaf," while others doubted the integrity of the medical profession, fearing misdiagnosis or financial exploitation. This distrust extends beyond individual practitioners to the health system as a whole, resulting in a preference for traditional healers perceived as more trustworthy or spiritually aligned. Conversely, HCPs attributed parental reluctance to misinformation, superstition, and inadequate community engagement rather than legitimate concerns about professional competence. HCPs maintained that rigorous training, quality control, and adherence to clinical standards could mitigate such distrust, yet acknowledged that transparency and accountability within the health sector remain limited. This divergence indicates that improving parental trust requires not only clinical excellence but also deliberate confidence-building measures and community involvement in healthcare design and delivery.

Another area of intersection concerns the influence of cultural and spiritual beliefs on health-seeking behaviour. Parents frequently attributed HL to supernatural causes such as witchcraft or divine punishment, as expressed by P3 and PF1 who linked HI to "bewitchment" or "the evil deeds of ancestors." Such attributions contribute to stigma, fear, and reluctance to seek biomedical intervention. HCPs corroborated these findings, observing that deeply entrenched cultural narratives often overshadow medical explanations. HCPs such as PF3 and PF4 reported that parents sometimes perceive screening as an admission that a curse exists, reinforcing avoidance behaviour. However, both groups acknowledged that cultural beliefs are not inherently negative; rather, they must be respectfully integrated into culturally competent health promotion strategies. The convergence here highlights the importance of health education that aligns medical messages with local cultural frameworks, thereby fostering acceptance without alienating traditional worldviews.

Both parents and HCPs also identified systemic deficiencies as a critical barrier to effective NNHS. Parents cited the absence of screening facilities in public hospitals, limited accessibility

to equipment, and uneven geographical distribution of services. P14 and P10, for instance, noted that “it’s available in a few hospitals, but not easy for everyone to get to,” and “we don’t have access even in teaching hospitals.” Similarly, HCPs admitted that infrastructural inadequacies, lack of policy support, and poor intersectoral coordination hindered the implementation of screening programmes. **HCP2** and P2 both linked these infrastructural gaps to the broader underdevelopment of the health sector, with HCPs lamenting the absence of funding and policy frameworks for hearing health. This convergence between parental experiences and professional diagnoses reveals systemic neglect, highlighting the urgent need for structural reforms to institutionalise hearing screening within primary healthcare.

Despite the shared recognition of barriers, HCPs tended to adopt a more critical stance towards TCM and parental misconceptions, while parents demonstrated a more pluralistic attitude towards healthcare options. Parents often advocated for coexistence between traditional and medical systems, believing that both could complement each other, while HCPs stressed the need for strict adherence to evidence-based practice. **HCP4**, for instance, expressed concern about “lack of good clinical practice and poor standardisation of herbal remedies,” while parents, such as PF1, described herbal use as part of everyday healthcare. This divergence underscores the need for dialogue between medical practitioners and traditional healers, aimed at fostering collaborative care pathways without compromising safety or scientific integrity.

The findings further reveal a shared call for education and awareness. Both groups emphasised that community-based sensitisation campaigns could bridge gaps in understanding and encourage early health-seeking behaviour. HCPs such as PF2 described their efforts to “convincingly encourage parents and guardians to present their children for screening,” while parents like P9 highlighted that “positive perceptions encourage screening for HL while negative perceptions discourage it.” These complementary insights suggest that education, when grounded in local realities, can serve as a transformative tool to reshape perceptions and dismantle stigma.

Overall, the findings demonstrate that both parents and HCPs recognise the value of NNHS, yet operate within distinct epistemic frameworks shaped by culture, access, and institutional capacity. Parents’ attitudes are influenced by experiential, cultural, and emotional dimensions of health, while HCPs focus on procedural, technical, and policy-oriented challenges. Converging on the importance of early detection, both groups ultimately advocate for improved accessibility, awareness, and integration of services. Diverging on issues of trust, cultural interpretation, and clinical accountability, their perspectives collectively underscore the need for a culturally sensitive, systemically inclusive, and ethically transparent model of healthcare.

delivery. Strengthening NNHS in Port Harcourt therefore requires an approach that harmonises parental belief systems with medical expertise through education, collaboration, and structural reform, ensuring equitable and sustainable access to hearing healthcare for all.

4.7 Participants' Recommendations

NNHS ought to be established as a regular public health measure in Port Harcourt to facilitate early detection and care for HL. To mitigate the identified cultural, social, and logistical challenges, the participants offered the following recommendation.

4.7.1 Campaigns for Public Awareness and Education

Successful implementation of NNHS necessitates addressing prevalent misunderstandings and insufficient awareness among parents and communities in Port Harcourt. Many parents believe hearing loss is a result of supernatural factors, such as ancestral punishment or witchcraft, which discourages them from seeking medical interventions (Olusanya *et al.*, 2007; Frank-Briggs, 2012). Public awareness programmes must be customised to inform parents about the medical origins of hearing loss, highlighting the advantages of early identification and intervention. These initiatives ought to utilise reputable community actors, including religious and traditional leaders, to convey culturally relevant themes that confront stigma. Local languages and media channels, such as radio, television, and community events, must be employed to guarantee that these messages reach varied audiences (Olusanya, Luxon and Wirz, 2005).

4.7.2 Integration of Screening into Standard Healthcare Services

Integrating NNHS into current healthcare services, such as immunisation and postnatal care, will facilitate access for parents and diminish the necessity for separate sessions. This comprehensive strategy guarantees that hearing screening is routinely incorporated into healthcare for all infants, regardless of whether they are born in hospitals or primary healthcare facilities. Considering the significant proportion of births occurring outside of hospitals in Nigeria, it is imperative to expand screening programmes to encompass community clinics and outreach institutions, thereby mitigating access inequities for rural and marginalised communities (Olusanya, 2015; Adewuyi *et al.*, 2019).

4.7.3 Training for HCPs

A significant barrier to efficient NNHS is the scarcity of qualified professionals proficient in using contemporary technology like OAE and AABR. HCPs, such as midwives, nurses, and general practitioners, must undergo extensive training in the utilisation of these technologies and the appropriate interpretation of results. Training programmes must incorporate directives

on proficient communication with parents, especially in relation to cultural and emotional issues pertaining to hearing loss (Olusanya and Solanke, 2009; Ptok, 2011). This will enable HCPs to provide superior services and enhance trust among parents.

4.7.4 Involvement with Fathers and Families

Historically, healthcare treatments for newborns in Nigeria predominantly emphasise women, overlooking the contributions of fathers and extended family members. Fathers, as principal decision-makers in numerous houses, must be actively involved in educational programmes. Workshops and counselling sessions should focus on engaging fathers in comprehending the significance of early hearing screening and addressing their fears or misconceptions. Involving the extended family in these discussions might promote a supportive environment, since familial perspectives frequently impact healthcare decisions (Tobih *et al.*, 2014; Jatto *et al.*, 2018).

4.7.5 Policy Formulation and Government Assistance

The Nigerian government must establish a standardised national policy framework for universal NNHS. This policy must encompass stipulations for financing, training, and the acquisition of screening equipment. It must establish explicit guidelines for follow-up treatment, guaranteeing that all neonates who do not pass first screens have prompt diagnostic assessments and therapies. Collaborations between government entities, non-governmental organisations, and private stakeholders can furnish further resources and knowledge to facilitate extensive implementation (Olusanya, 2011; WHO, 2019a, 2019b, 2019c). Advocacy initiatives must emphasise the enduring advantages of early hearing detection, such as enhanced educational achievements and less societal expenditures.

4.7.6 Community-based Screening

Considering that a substantial percentage of births in Nigeria take place outside formal healthcare facilities, community-based methods are crucial for accessing rural and marginalised populations. Mobile screening units capable of accessing rural locations, along with home-based screenings performed by experienced community HCPs, are effective strategies to broaden the scope of these programmes (Colgan *et al.*, 2012; McPherson *et al.*, 2012). These approaches can be enhanced by local collaborations, including the engagement of midwives and traditional delivery attendants, to guarantee extensive participation and confidence.

4.7.7 Mitigation of Financial Obstacles

Financial limitations pose a considerable barrier to healthcare access in Nigeria, especially for low-income households. Offering NNHSs at no cost or at significantly reduced costs will promote increased participation. Governments and NGOs ought to allocate resources to finance the expenses associated with screening apparatus, personnel training, and subsequent care. Collaborations with global entities, such WHO and UNICEF, may facilitate the acquisition of essential resources to render screening both inexpensive and sustainable (Olusanya, 2008; Suleimanifar, Jafadi and Zarandi, 2015).

4.7.8 Parental Support for Follow-Up

Post-screening care is essential for the efficacy of NNHS initiatives. Parents of children identified during preliminary screenings must obtain sufficient assistance to comprehend further procedures, encompassing diagnostic assessments and treatment alternatives. Counselling services have to be accessible to assist parents in navigating the process and addressing any emotional or logistical difficulties they may encounter. Support groups for parents of children with hearing loss can create a feeling of community and shared learning, supporting continuing involvement with healthcare services (Holte *et al.*, 2012; Ravi *et al.*, 2016). Moreover, HCPs must establish comprehensive tracking mechanisms to guarantee that no Child is overlooked in follow-up care.

By thoroughly addressing these aspects, NNHS programmes in Port Harcourt can surmount cultural, logistical, and budgetary barriers. Executing these recommendations will augment early detection rates, facilitate prompt interventions, and eventually improve developmental outcomes for children with hearing loss, so contributing to overarching public health objectives.

4.8 Chapter Summary

This chapter delineates the findings obtained from the semi-structured interviews with parents and healthcare stakeholders regarding access to NNHS in Port Harcourt, Nigeria, which included the demographic attributes of the participants, comprising parents, expectant parents, NGO coordinators, and HCPs. Participants encompassed a variety of age demographics, educational qualifications, and job conditions, with the majority identifying as Christians and married.

The results underscore many major topics that arose from the interviews comprising the aetiologies of neonatal hearing loss, with respondents ascribing auditory impairment to accident-related occurrences, medical ailments, infections, and notably, cultural and spiritual convictions such as witchcraft or divine retribution. These cultural interpretations frequently

obstruct timely medical action. Also, the diagnosis of neonatal hearing loss, wherein participants noted discernible behavioural alterations in children, including an absence of reaction to auditory stimuli or delayed speech acquisition. Parents frequently depended on conventional or anecdotal observations instead of formal assessments to detect hearing problems in their children.

The first two themes addressed the comprehension and awareness about hearing loss. It was clear that although some participants exhibited a fundamental comprehension of hearing impairment, misconceptions and restricted awareness remained, particularly about the advantages of early screening and intervention. This ignorance was exacerbated by societal shame and the fear of social ostracism. This chapter analyses beliefs and attitudes around neonatal hearing loss. Some parents regarded hearing impairment as a tolerable disease, while others considered it a heavenly curse or punishment, leading to reluctance in pursuing medical care. Moreover, HCPs articulated their anger with institutional impediments, such as inadequate training, resource scarcity, and the lack of a regulated regulatory framework for NNHS.

Cultural and religious beliefs were identified as substantial obstacles, with participants observing that society norms and spiritual interpretations frequently eclipse medical counsel. The analysis of parental decision-making roles indicated that parental views, particularly those of mothers, significantly influenced the likelihood of children undergoing screening.

The second two themes concerned access. Access barriers were recognised as complex, including financial limitations, insufficient screening resources, lack of awareness, and systemic healthcare deficiencies. Financial constraints surfaced as a persistent issue, with parents indicating that expenses related to screening and subsequent care were unaffordable for numerous families. Moreover, the deficiency of educated HCPs and the absence of screening equipment exacerbated the problem.

Measures to enhance access to NNHS were recommended by participants. they advocated for public health campaigns to enhance awareness, governmental investment in healthcare infrastructure, obligatory NNHS laws, and culturally attuned educational initiatives. A demand was made for the incorporation of screening into standard mother and child health services to guarantee sustainability and accessibility.

CHAPTER 5

Discussion

5.1 Introduction

This chapter critically synthesises and interprets the findings of the study exploring the attitudes and perceptions of parents and healthcare stakeholders toward accessing NS for HL in Port Harcourt, Nigeria. It contextualises these findings within the broader body of literature on EHDI, public health, and behavioural health theory. The discussion advances understanding of how sociocultural, systemic, and informational factors influence the uptake and implementation of NNHS programmes in low-resource contexts. The chapter also evaluates the implications of these findings for policy, practice, and future research, guided by theoretical frameworks such as the HBM and the SEM. Through this synthesis, the discussion establishes how the intersection of individual beliefs, cultural constructs, and institutional limitations shapes health-seeking behaviour and decision-making concerning childhood hearing health.

5.2 Conceptual Overview of the Study

The study revealed a complex interplay between knowledge, attitudes, cultural perceptions, and systemic barriers influencing the accessibility and acceptance of NNHS in Port Harcourt. While both HCPs and parents demonstrated an awareness of HL as a medical and developmental concern, substantial variations existed in the depth of understanding, perceived importance, and willingness to engage in preventive screening practices. These findings mirror broader evidence that the implementation of EHDI programmes in SSA is constrained by multifaceted determinants, including lack of awareness, limited infrastructure, inadequate policy support, and sociocultural misconceptions (Mulwafu *et al.*, 2017; Swanepoel and Clark, 2019; Olusanya, 2020).

At the conceptual level, the study reinforces the notion that health-related decision-making cannot be examined solely through biomedical frameworks but must be situated within the broader cultural, social, and economic contexts that shape behaviour. This aligns with the growing emphasis in global health research on contextualising healthcare uptake within sociocultural realities (Kuper *et al.*, 2018; WHO, 2021). In Port Harcourt, as in many low- and middle-income regions, the intersection of poverty, limited access to quality healthcare, and enduring traditional belief systems significantly influences parents' and HCPs' orientation towards preventive services such as NNHS.

A key conceptual contribution of the study is its illumination of *perceived susceptibility* and *perceived severity*, two core constructs of the HBM (Rosenstock, 1974; Becker, 1978). The findings suggest that both parents and professionals often underestimated the likelihood of congenital or early-onset HL, perceiving it as a rare or less urgent condition compared to other neonatal health concerns such as jaundice or infections. This diminished perception of susceptibility, coupled with the low perceived severity of untreated HL, may explain the limited motivation for early screening. Empirical research in similar contexts corroborates this trend, demonstrating that when HL is not immediately visible or symptomatic, it tends to be deprioritised by both caregivers and healthcare workers (Owolabi *et al.*, 2020; Bright *et al.*, 2022). Consequently, health promotion strategies that fail to address these perceptual constructs may inadvertently perpetuate low screening uptake.

Furthermore, the study underscores the influence of *perceived benefits* and *barriers*, other central dimensions of the HBM. Although participants generally recognised the potential advantages of early detection, such as timely intervention, improved speech development, and social integration, these perceived benefits were often overshadowed by barriers including cost, accessibility, and infrastructural inadequacies. Similar patterns have been reported in Nigeria and other African settings, where the absence of universal screening frameworks, limited audiological expertise, and inconsistent referral systems pose persistent obstacles (Olusanya *et al.*, 2014; Jatto *et al.*, 2018). These systemic challenges undermine individual motivation and reinforce reliance on traditional or informal care pathways.

5.3 Theoretical Integration and Frameworks

To deepen understanding of these findings, it is essential to apply theoretical lenses that illuminate the multidimensional determinants of health behaviour. The HBM provides a valuable framework for interpreting the interplay between personal beliefs, perceived threats, and health-seeking behaviour. Within this study's context, parental engagement with NNHS was heavily mediated by perceptions of susceptibility, perceived efficacy of medical intervention, and trust in healthcare institutions. Parents who exhibited stronger belief in biomedical efficacy and greater confidence in the health system were more likely to endorse screening, consistent with HBM's premise that perceived benefits, and low barriers increase likelihood of action (Champion and Skinner, 2008; Carpenter, 2010).

However, the HBM alone cannot fully account for the structural and contextual influences identified. Hence, the SEM (Bronfenbrenner, 1977; McLeroy *et al.*, 1988) complements this analysis by situating individual behaviour within multiple levels of influence, individual, interpersonal, community, organisational, and policy. At the individual level, knowledge deficits

and personal beliefs about HI shaped readiness for screening. At the interpersonal level, social networks, family influence, and community norms either facilitated or inhibited engagement. For instance, where communities held strong cultural beliefs attributing HL to spiritual or moral causes, screening was perceived as unnecessary or even taboo, echoing findings by Adigun *et al.* (2021) and Mulwafu *et al.* (2022). At the organisational level, the scarcity of screening equipment and trained personnel, as well as weak referral and follow-up systems, constrained the capacity of health institutions to deliver consistent services. Finally, at the policy level, the absence of a national NNHS framework perpetuated fragmented and ad hoc practices (Olusanya *et al.*, 2014; WHO, 2021).

This theoretical triangulation underscores that effective EHDl implementation requires simultaneous attention to both behavioural and systemic determinants. Interventions focused solely on individual awareness will be insufficient if structural enablers such as equipment, personnel, and policy frameworks remain underdeveloped. Conversely, investments in infrastructure without corresponding efforts to shift cultural perceptions and enhance health literacy may yield limited behavioural change. A holistic, multi-level strategy, therefore, becomes imperative.

Recent global evidence reinforces this view. Studies from high-income settings demonstrate that UNHS is most successful when supported by robust governance, mandatory policies, and integrated care pathways linking screening to diagnostic and rehabilitative services (Korver *et al.*, 2017; Halliday *et al.*, 2020). In contrast, in low-resource contexts like Nigeria, where healthcare systems are decentralised and underfunded, implementing similar models requires culturally adaptive and contextually sensitive approaches (Swanepoel *et al.*, 2020). The Port Harcourt findings, therefore, extend theoretical discourse by emphasising how individual perceptions are intertwined with systemic inequities and broader social determinants of health.

5.4 Health Behaviour and Cultural Cognition

An important conceptual implication of this study concerns the interface between health behaviour and cultural cognition. Health decision-making is not merely a rational response to risk information but is deeply embedded within the cultural and epistemological frameworks that shape individuals' understanding of illness and healing. The persistence of traditional interpretations of HL, such as spiritual causation, ancestral punishment, or supernatural affliction, demonstrates that biomedical explanations coexist with, and sometimes compete against, indigenous belief systems (Obasi and Nwogu, 2019; Jegede, 2020). This cultural dualism is significant for understanding why some parents prefer traditional or spiritual interventions to hospital-based care. It also explains why certain HCPs, who are themselves

members of these communities, may tacitly accommodate such beliefs in their clinical interactions.

Cultural cognition theories suggest that individuals interpret health information through the lens of group identity and shared values (Douglas, 1986; Kahan, 2012). In the Nigerian context, where communal and spiritual worldviews dominate, beliefs about health are often tied to notions of destiny, morality, and divine will. Consequently, HL may not be viewed as a preventable biomedical condition but as a metaphysical event requiring moral or spiritual redress. The implications for NNHS are profound: health promotion efforts that ignore these cultural logics may fail to resonate with target populations. As emphasised by Kuper *et al.* (2020), culturally incongruent health interventions often encounter resistance because they appear to challenge rather than complement existing value systems.

For this reason, the integration of cultural competence into health policy and practice is crucial. Programmes that engage religious leaders, community influencers, and traditional healers can facilitate the social acceptance of biomedical screening by reframing it within locally meaningful narratives. This approach aligns with evidence from community health promotion in other domains, such as immunisation and maternal health, where culturally embedded strategies have enhanced participation and trust (Ekechi *et al.*, 2021; WHO, 2022).

5.5 Main Outcomes

5.5.1 Interrelation Between Parental and Professional Perspectives

The intersection between parental and HCP perspectives reveals a shared but asymmetrical understanding of hearing health. Both groups acknowledged the importance of early identification, yet their interpretations of responsibility, causation, and feasibility diverged significantly. Parents largely viewed hearing screening as contingent upon guidance and reassurance from HCPs, whereas professionals tended to attribute poor uptake to parental ignorance or cultural resistance. This bidirectional attribution of blame underscores a critical communication gap within the health system, a phenomenon well documented in African healthcare contexts where systemic weaknesses obscure shared accountability (Olusanya, 2020; Bright *et al.*, 2022).

This misalignment between caregiver and professional perspectives is not merely informational but relational, reflecting power asymmetries in health communication. Theoretical models of provider–patient interaction, particularly those grounded in social constructivism, posit that knowledge transmission is influenced by mutual trust and perceived legitimacy (Street *et al.*, 2009; Lambert, 2019). When parents perceive professionals as

dismissive or unapproachable, engagement with health interventions such as NNHS diminishes. Conversely, professionals who encounter parents exhibiting scepticism or adherence to traditional beliefs may experience frustration, reinforcing a cycle of disengagement. Thus, the challenge is not only to provide accurate information but to foster empathetic, dialogic communication that bridges epistemological divides between biomedical and traditional worldviews (Kuper *et al.*, 2020; Adeniyi *et al.*, 2021).

Globally, research consistently shows that effective early hearing detection programmes depend on strong parent–provider partnerships. Studies in the United Kingdom, the Netherlands, and Australia have demonstrated that when parents receive supportive counselling and clear follow-up pathways, participation in NNHS exceeds 95% (Korver *et al.*, 2017; Halliday *et al.*, 2020). In contrast, in LMICs, where health communication is often sporadic and under-resourced, parental confusion and ambivalence remain prevalent (Swanepoel and Clark, 2019). The findings from Port Harcourt thus resonate with broader evidence that strengthening the relational dimension of healthcare delivery, through empathy, trust, and culturally informed communication, is indispensable for improving uptake.

5.5.2 Parental Perceptions and Behavioural Determinants

The parental perspectives examined in this study highlight the interconnection between knowledge, perceived risk, and the cultural framing of illness. Many parents conceptualised HL as an exceptional or morally charged condition rather than a common and medically manageable disability. This resonates with findings from Ghana (Bam *et al.*, 2019) and Kenya (Mulwafu *et al.*, 2022), where HI is frequently associated with spiritual causation, leading families to seek traditional remedies. Such explanatory models not only deter engagement with formal screening programmes but also delay diagnosis and rehabilitation.

Within the framework of the HBM, this behaviour reflects low *perceived susceptibility* and *perceived severity*, coupled with high *perceived barriers* to screening. The perception that HL “could not happen to my child” or that “medical screening may be invasive or unnecessary” aligns with the protective bias documented in parental psychology, where denial serves as a defence against perceived threats to family well-being (Carpenter, 2010). Parental readiness for screening is thus mediated by a balance between perceived vulnerability and perceived efficacy of intervention. Where awareness campaigns have clearly articulated the link between early detection and developmental outcomes, uptake has been shown to improve significantly (Olusanya *et al.*, 2014; Bright *et al.*, 2022).

Economic factors also exerted a major influence on parental decision-making. Parents expressed concern about the affordability of screening and subsequent interventions,

reflecting the broader challenge of healthcare financing in Nigeria's mixed public–private system. Out-of-pocket expenses remain the dominant mode of payment, accounting for over 70% of healthcare expenditure (World Bank, 2022). Consequently, preventive services like NS, which are not perceived as urgent, are often deprioritised. This underscores the intersection of socioeconomic and cognitive determinants, where cost amplifies low perceived need. Similar trends have been observed in South Africa and Malawi, where financial constraints significantly reduce participation in preventive health services (Mulwafu *et al.*, 2017; Swanepoel *et al.*, 2020).

Furthermore, parental perceptions were shaped by emotional and psychological dimensions, particularly anxiety surrounding potential diagnoses. As literature on health psychology suggests, preventive screening can trigger anticipatory fear, leading some parents to avoid testing altogether (Cameron and Leventhal, 2012). In collectivist societies, where disability is often stigmatised, such fears are compounded by concern for family reputation and community judgement (Ekechi *et al.*, 2021). Thus, parental decision-making cannot be fully explained by rational cost–benefit analysis; it must be understood as a complex negotiation between cultural stigma, emotional coping, and perceived moral responsibility.

5.5.3 HCPs' Perceptions and Systemic Constraints

The perspectives of HCPs reflected an awareness of both the medical importance and the logistical challenges of NNHS. Many recognised that early identification could significantly improve children's developmental trajectories, aligning with global clinical consensus (WHO, 2021). However, they also acknowledged systemic deficits, shortages of trained audiologists, limited diagnostic equipment, and the absence of standardised referral pathways, which collectively hinder implementation. These findings are consistent with earlier reports by Olusanya *et al.* (2014) and more recent assessments by the WHO (2022), which describe the scarcity of human and technological resources as a primary impediment to the sustainability of EHDI programmes in SSA.

Professional perspectives also revealed underlying frustration with institutional inefficiencies and policy gaps. Despite awareness of international recommendations for UNHS (Korver *et al.*, 2017; Joint Committee on Infant Hearing, 2019), many practitioners reported that such guidelines are not operationalised in Nigeria due to lack of policy integration. This disconnects between knowledge and implementation exemplifies the “policy–practice gap” described by Shilton *et al.* (2020), wherein evidence-based interventions fail to translate into practice due to weak governance and fragmented health planning. Consequently, professionals often rely

on ad hoc initiatives, such as opportunistic screening during immunisation clinics, rather than systematic protocols.

Another dimension of professional perception relates to *moral and professional responsibility*. Many healthcare workers expressed a sense of obligation to advocate for NS but simultaneously felt constrained by inadequate institutional support. This tension between professional duty and systemic limitation mirrors patterns observed in other domains of Nigerian healthcare, where practitioners operate under resource scarcity and high patient loads (Adeniyi *et al.*, 2021). The emotional toll of these conditions can lead to burnout and reduced motivation, further compromising service delivery.

Trust and competence emerged as key themes in how both parents and professionals conceptualised healthcare quality. Professionals perceived that parental mistrust stemmed from misinformation or cultural beliefs, whereas parents interpreted perceived negligence or diagnostic errors as evidence of incompetence. Such mutual scepticism exacerbates the trust deficit, which is well documented in literature on African health systems (Jegede, 2020; Bright *et al.*, 2022). Rebuilding this trust requires systemic reform that strengthens quality assurance, transparency, and professional accountability.

5.5.4 Convergence and Divergence Between Parents and Professionals

The analysis of convergences and divergences between parents and HCPs provides critical insight into the structural and cultural dynamics shaping health behaviour. Both groups demonstrated a conceptual understanding of the value of early detection and intervention for HL. However, while professionals emphasised institutional barriers such as lack of equipment and training, parents focused more on cultural beliefs, financial costs, and fear of stigma. This divergence in emphasis reveals differing frames of reference: professionals operate within the logic of system capacity, whereas parents navigate within the logic of everyday survival and sociocultural meaning.

Interestingly, both groups shared an implicit optimism that HL could be managed with appropriate care, suggesting a latent readiness for change. This aligns with the theory of “latent health demand” in behavioural economics, which posits that willingness to adopt preventive interventions increases when individuals perceive clear, feasible pathways to action (Thomson and Dixon, 2019). Thus, improving service visibility and accessibility could unlock this latent demand. Evidence from pilot screening programmes in Lagos and Pretoria has shown that when logistical barriers are reduced, participation rates among parents increase dramatically, irrespective of baseline knowledge (Swanepoel *et al.*, 2020; Olusanya *et al.*, 2021).

At the same time, the findings highlight how both groups are constrained by structural inequities that transcend individual agency. Parents' cultural beliefs are sustained by historical marginalisation and inadequate health education, while professionals' frustrations are rooted in underfunded institutions and absent policy frameworks. This interdependence underscores the need for integrated interventions that simultaneously address micro-level cognition and macro-level infrastructure (Kuper *et al.*, 2018; WHO, 2022). Without such alignment, efforts to change behaviour or improve service delivery will remain fragmented.

5.5.5 Global and National Contextualisation

Situating these findings within the global and national context reveals important parallels and disparities. Internationally, NNHS has transitioned from selective to universal approaches over the past two decades, largely due to evidence demonstrating the developmental benefits of early intervention (Korver *et al.*, 2017; Halliday *et al.*, 2020). In contrast, most African countries, including Nigeria, remain in early stages of implementation, often limited to pilot projects in tertiary hospitals (Olusanya, 2020). This discrepancy reflects broader inequalities in healthcare infrastructure, workforce capacity, and policy prioritisation between high-income and low-income regions.

In Nigeria, neonatal care has traditionally prioritised conditions perceived as life-threatening, such as infections, jaundice, or birth asphyxia (Adeniyi *et al.*, 2021). Consequently, sensory impairments like HL are often neglected in public health planning. Moreover, the NHIS provides limited coverage for preventive or rehabilitative audiological services, further marginalising this aspect of child health. Scholars such as Ekechi *et al.* (2021) argue that this structural neglect perpetuates intergenerational cycles of disability and poverty, given that untreated childhood HL has enduring impacts on education and employment.

Despite these challenges, emerging policy discussions in Nigeria and across Africa signal growing recognition of the importance of hearing health. The WHO's 2021 *World Report on Hearing* emphasises early detection as a cornerstone of global ear and hearing care strategies, recommending integration of hearing screening into existing maternal and child health frameworks (WHO, 2021). Nigeria's Federal Ministry of Health has also endorsed the development of a national strategy for ear and hearing care (Olusanya, 2022), though implementation remains pending. The findings from Port Harcourt thus contribute timely evidence to inform these policy deliberations, highlighting both the readiness and the reservations that exist among stakeholders.

5.5.6 Integrating Behavioural, Cultural, and Systemic Determinants

The findings of this study highlight the interdependence of behavioural, cultural, and systemic factors in shaping the attitudes and perceptions surrounding NNHS in Port Harcourt. This synthesis confirms that the determinants of health-seeking behaviour are not isolated variables but are embedded in a complex social ecology. The Socioecological Model (Bronfenbrenner, 1977; McLeroy *et al.*, 1988) provides a valuable lens through which to conceptualise this complexity, illustrating how individual beliefs and health decisions are influenced by broader social systems and institutional structures.

At the **individual level**, knowledge and attitudes towards HL played a decisive role in determining screening uptake. Parents who demonstrated some understanding of the causes and implications of HI were more receptive to screening and early intervention. Conversely, lack of knowledge often perpetuated myths, denial, or avoidance behaviour. This finding resonates with Olusanya (2020) and Bright *et al.* (2022), who observed that low awareness about childhood HL remains one of the most significant barriers to early detection in SSA. Such findings affirm that improving health literacy—through public awareness campaigns and culturally relevant communication—should remain a central priority.

At the **interpersonal and community levels**, cultural values and social norms strongly influenced parental perceptions. Traditional interpretations of disability, particularly the belief that HL results from ancestral punishment, witchcraft, or divine retribution, were shown to influence care-seeking behaviour. These beliefs persist even among educated populations, suggesting that cultural cognition continues to shape responses to biomedical advice (Jegede, 2020). This echoes Kuper *et al.* (2018), who assert that cultural and social identities profoundly determine engagement with health services, especially where community belonging and moral standing are interwoven with health outcomes. Thus, interventions that engage community leaders, religious institutions, and local health influencers may serve as more effective vehicles for promoting acceptance of biomedical screening than conventional top-down health education.

At the **institutional level**, the study illuminated significant infrastructural and operational deficits within the healthcare system. The absence of functional audiological equipment, insufficiently trained personnel, and inadequate follow-up mechanisms limit the potential for effective screening even when awareness exists. The situation in Port Harcourt mirrors systemic weaknesses observed elsewhere in Nigeria and other low-resource settings (Mulwafu *et al.*, 2017; Olusanya *et al.*, 2021). Institutional deficiencies also compound negative public perceptions of medical competence and trustworthiness, reinforcing the preference for

informal or traditional care pathways. This interplay between systemic fragility and public mistrust substantiates Kaseje's (2020) argument that health systems in many African countries suffer from "trust deficits" arising from recurrent service failures and governance gaps.

Finally, at the **policy and societal levels**, the absence of a coherent national NNHS policy reflects broader public health prioritisation challenges. Hearing health remains peripheral in Nigeria's national child health agenda, despite its long-term implications for development, education, and social inclusion. Studies by Swanepoel and Clark (2019) and WHO (2021) underscore that sustainable EHDI programmes require formal policy integration, dedicated funding, and political will. Without these, localised initiatives risk remaining fragmented and unsustainable. The lack of policy direction also limits the accountability of healthcare institutions and professionals, perpetuating uneven service provision.

5.5.7 Trust, Communication, and Health System Legitimacy

A unifying theme emerging from this synthesis is the issue of *trust*, trust in HCPs, in the health system, and in the efficacy of biomedical intervention. Parental hesitancy towards NNHS cannot be disentangled from the historical and sociopolitical context of healthcare delivery in Nigeria. Widespread reports of medical negligence, corruption, and inefficiency have eroded public confidence (Adeniyi *et al.*, 2021; Bright *et al.*, 2022). The findings of this study reveal that many parents approach hospitals with a degree of scepticism, fearing misdiagnosis or financial exploitation. This aligns with findings by Jegede (2020), who identified distrust as a major barrier to healthcare utilisation in Nigeria.

Trust theory in healthcare posits that confidence in medical institutions is sustained through consistent delivery of competent, ethical, and empathetic care (Mechanic and Meyer, 2000; Gilson, 2003). Where these qualities are absent, trust deteriorates and patients seek alternatives that appear more relationally authentic, such as traditional or faith-based healing. In the context of NNHS, rebuilding trust demands both structural and relational reforms. Structurally, health facilities must demonstrate reliability by maintaining equipment, providing transparent services, and ensuring accountability. Relationally, HCPs must cultivate cultural sensitivity and effective communication to convey empathy and competence.

Communication, in particular, emerged as a decisive factor shaping parental decisions. Ineffective or paternalistic communication from HCPs can inadvertently reinforce fear, misunderstanding, and avoidance. Research in maternal and child health across SSA supports this conclusion, demonstrating that respectful, patient-centred communication improves adherence to preventive interventions (Adeniyi *et al.*, 2021; Ekechi *et al.*, 2021).

Thus, developing structured communication protocols and patient counselling guidelines for NNHS could enhance parental understanding and participation.

5.5.8 Integrating Cultural Competence into Hearing Health Policy

The imperative of cultural competence in healthcare is particularly salient in multicultural and pluralistic societies like Nigeria. The study's findings indicate that despite general recognition of the importance of NNHS, cultural and spiritual explanations for HL often compete with biomedical narratives. This coexistence reflects what medical anthropologists describe as *medical pluralism*, the simultaneous engagement with multiple healing systems (Kleinman, 1980; Kuper *et al.*, 2020). To promote screening, policy frameworks must therefore adopt a culturally integrative approach rather than an oppositional stance toward traditional belief systems.

Practical strategies include community dialogue programmes that involve traditional healers and religious leaders as partners in promoting NS. Similar collaborative models have been successful in immunisation and HIV prevention campaigns across Africa (Ekechi *et al.*, 2021; WHO, 2022). Moreover, public health communication should employ locally resonant metaphors and vernacular expressions to demystify hearing screening. As Kahan (2012) argues in his work on cultural cognition, persuasion is most effective when messages align with recipients' cultural worldviews rather than challenge them.

Integrating cultural competence also requires attention to gender dynamics and social hierarchy. In many Nigerian communities, health decisions for infants are influenced by extended family members, especially fathers and elders. Ignoring these decision-making hierarchies can result in partial acceptance or outright rejection of screening recommendations. Thus, culturally sensitive interventions should involve both mothers and key household decision-makers, ensuring that the screening process is framed as a family rather than an individual responsibility.

5.5.9 Policy and Practice Implications

The synthesis of these findings yields several critical implications for policy and practice.

First, national policy integration is essential. Without legislative backing, NNHS will remain dependent on isolated pilot projects. The establishment of a national EHDI framework, aligned with WHO (2021) recommendations, would ensure uniformity, resource allocation, and quality control. This policy should mandate screening for all newborns within two weeks of birth, consistent with global standards, while providing for follow-up diagnostic and rehabilitative services.

Second, capacity building within the health workforce must be prioritised. Training programmes for audiologists, nurses, and primary healthcare workers can expand the human resource base needed for nationwide implementation. Continuous professional development should include modules on communication, counselling, and cultural competence to enhance service delivery quality. Evidence from South Africa demonstrates that decentralised, task-shared models of screening, where trained nurses conduct initial tests before referral, can significantly improve coverage (Swanepoel *et al.*, 2020).

Third, community-based awareness and engagement should complement institutional reforms. Public education campaigns using mass media, community forums, and social media platforms can enhance understanding of HL and the benefits of early screening. Importantly, such campaigns should address the emotional and cultural dimensions of HI by promoting narratives of empowerment and inclusion rather than deficit or shame (Obasi and Nwogu, 2019).

Fourth, financing mechanisms must be restructured to improve affordability. Integrating NNHS into the NHIS would reduce out-of-pocket costs and improve equity. The economic rationale for such inclusion is compelling: early detection and intervention reduce the long-term costs of special education and social dependency (WHO, 2021). Pilot cost–benefit analyses in Nigeria have already demonstrated that the lifetime savings from early intervention outweigh initial programme expenditures (Olusanya *et al.*, 2022).

Finally, research and monitoring systems must be institutionalised. A centralised data registry for hearing screening outcomes would enable tracking, evaluation, and quality improvement. Collaboration between academic institutions, hospitals, and government agencies could generate the evidence base needed to refine policy and maintain accountability.

5.5.10 Bridging Theory and Practice

The findings of this study reinforce the importance of applying behavioural and social science theories to public health practice. The HBM elucidates how perceptions of risk, severity, benefits, and barriers interact to influence parental decision-making. The Socioecological Model situates these individual behaviours within layered social and institutional contexts. However, the Port Harcourt study extends these frameworks by revealing that structural barriers and cultural meaning systems exert an equal, if not greater, impact on behaviour as personal beliefs. This aligns with emerging critiques of traditional health behaviour models that call for greater integration of structural and cultural determinants (Glanz *et al.*, 2015; Kuper *et al.*, 2020).

Furthermore, the concept of *health system trust* introduces a critical mediating variable that bridges psychological and systemic dimensions. Trust influences how individuals interpret risk, evaluate medical advice, and engage with preventive services. Therefore, theoretical frameworks addressing preventive health behaviour in LMICs must explicitly incorporate trust as a determinant of action, especially in postcolonial contexts where medical institutions often carry legacies of inequality and neglect (Gilson, 2003; Jegede, 2020).

5.5.11 Limitations and Future Directions

While this discussion emphasises the broad implications of the findings, it is important to acknowledge inherent limitations. The study's qualitative design, though rich in contextual depth, limits generalisability. Further quantitative research could test the strength of associations between identified variables, such as awareness, trust, and cultural beliefs, across larger populations. Additionally, comparative studies across different regions of Nigeria could reveal geographic variations in perception and access, contributing to more targeted policy design.

Future research should also explore intervention models that integrate technological innovation, such as mobile-based hearing screening tools, which have shown promise in low-resource environments (Swanepoel *et al.*, 2020). Evaluating the effectiveness of culturally tailored awareness campaigns and trust-building strategies could further advance understanding of how to promote early hearing detection in diverse settings.

This section of the discussion illustrates that improving access to and acceptance of NNHS in Port Harcourt, and by extension Nigeria, requires a holistic strategy that transcends individual education. Behavioural, cultural, and systemic determinants are deeply intertwined, creating a web of influences that shape health-seeking behaviour. Parents' attitudes are informed not only by knowledge and cost considerations but by cultural worldviews and trust in medical institutions. HCPs, though committed to early detection, are constrained by systemic inadequacies and policy voids.

Bridging these divides necessitates a multi-level intervention that integrates policy reform, institutional strengthening, and community engagement. Embedding NNHS within national health frameworks, equipping professionals with training and resources, and promoting culturally sensitive public education are essential steps towards universal implementation. Most importantly, trust must be rebuilt, between communities and health systems, between parents and professionals, to transform preventive hearing care from an optional service into an expected standard of neonatal health.

The findings underscore that NNHS is not merely a clinical procedure but a reflection of societal values regarding inclusion, equity, and child welfare. By fostering a system that recognises hearing health as integral to holistic well-being, Nigeria can move closer to achieving the global vision of *hearing care for all* (WHO, 2021).

5.6 Perceived Barriers, Facilitators, and Policy Implications for EHDI in Nigeria

The delivery and acceptance of NNHS in Nigeria are embedded within a web of systemic, sociocultural, and behavioural determinants that reflect both the strengths and weaknesses of the national health system. Although global evidence has conclusively demonstrated that early identification of HL mitigates the cognitive, linguistic, and psychosocial consequences of deafness (Korver *et al.*, 2017; WHO, 2021), translation of this evidence into practice across LMICs remains uneven. Nigeria's situation epitomises this disparity: despite several pilot studies confirming feasibility (Olusanya *et al.*, 2014; Olusanya and Newton, 2018), large-scale implementation is constrained by inadequate infrastructure, workforce shortages, fragmented policy, and limited public awareness.

This section critically explores the barriers that impede effective EHDI and the facilitators that could support sustainable integration into Nigeria's child-health system. It also analyses the policy implications of these findings in relation to global frameworks such as the *World Report on Hearing* (WHO, 2021) and the Sustainable Development Goals (SDGs), particularly Goal 3, which calls for universal access to essential health services. By triangulating the findings of this study with existing national and international literature, the section situates NNHS not as a discrete clinical service but as a key indicator of systemic equity, governance, and cultural responsiveness.

5.6.1 Systemic and Structural Barriers

5.6.1.1 Infrastructure and Technological Capacity

A principal barrier to EHDI in Nigeria is the paucity of appropriate infrastructure. Most tertiary hospitals lack functioning audiological suites, calibrated screening devices, and soundproof environments required for reliable testing (Olusanya *et al.*, 2020; WHO, 2021). Where such equipment exists, maintenance and calibration are irregular because biomedical engineering capacity is under-developed (Adeniyi *et al.*, 2021). The absence of uninterrupted power supply, sterilisation facilities, and data-management systems further constrains routine screening. These infrastructural deficiencies mirror broader national deficits in medical technology management and health-facility readiness (World Bank, 2022).

Comparative evidence from South Africa and Kenya reveals that when screening technologies such as OAE devices are locally maintained and decentralised to primary-care clinics, coverage increases substantially (Swanepoel and Clark, 2019; Mulwafu *et al.*, 2022). In Nigeria, however, hearing-screening services are almost exclusively confined to urban tertiary hospitals, leaving rural populations unserved. This urban concentration perpetuates regional inequities, reinforcing the observation that service availability in many African health systems correlates with socioeconomic geography (Kaseje, 2020). Hence, any strategy for national scale-up must incorporate infrastructural investment at primary and secondary levels, supported by maintenance training and supply-chain logistics for consumables.

5.6.1.2 Human Resources and Workforce Development

A related constraint is the chronic shortage of trained personnel. Nigeria has fewer than one audiologist per 500,000 people and limited training opportunities for audiology or speech-language pathology (Olusanya, 2020). Nurses and general practitioners, who constitute the majority of maternal-child-health staff, often have minimal exposure to audiological screening protocols during their professional education. The findings from Port Harcourt echo those of Olusanya and Okolo (2021), who identified workforce scarcity and inconsistent competency standards as the most significant threats to sustainable EHDI implementation in West Africa.

From a systems perspective, the human-resource crisis reflects both “brain drain” and weak professional regulation. HCPs frequently migrate to higher-income countries, leaving behind under-resourced departments and limited mentorship capacity (Adeniyi *et al.*, 2021). Moreover, where personnel exist, they are unevenly distributed, concentrated in urban academic centres, thereby limiting rural outreach. International models demonstrate that task-sharing, training nurses or community HCPs to conduct initial OAE screening, can effectively compensate for audiologist shortages without compromising quality (Swanepoel *et al.*, 2020). However, such innovations require policy endorsement, standardised curricula, and certification frameworks to ensure consistency.

5.6.1.3 Governance, Leadership, and Policy Fragmentation

Governance failures are a deeper structural barrier underlying resource deficit. Nigeria lacks a formally enacted national policy for UNHS despite decades of advocacy (Olusanya and Newton, 2018). The absence of legislation or regulatory guidelines leads to fragmented service provision, dependent on isolated institutional initiatives or donor projects. This fragmentation exemplifies what Shilton *et al.* (2020) describe as the “implementation gap” between evidence and policy execution in LMIC health systems.

Effective governance requires clear policy mandates, delineated roles, and dedicated funding streams. At present, hearing screening is not explicitly integrated into national child-health programmes such as the Integrated Maternal, Newborn and Child Health (IMNCH) strategy. Consequently, accountability for its implementation is diffused across various departments, public-health, otolaryngology, and paediatrics—without a unified monitoring mechanism. Studies from Botswana and Rwanda illustrate that when EHDI is anchored within national child-health frameworks and supported by government stewardship, programme continuity and data reliability improve dramatically (Kuper *et al.*, 2020; WHO, 2022).

Leadership deficits also manifest at institutional levels. Hospital managers often prioritise curative services perceived as revenue-generating, while preventive screenings are regarded as ancillary. This misalignment between financial incentives and preventive priorities contributes to the marginalisation of hearing health. Establishing national standards and performance indicators for EHDI could re-align institutional accountability and ensure sustained leadership commitment.

5.6.1.4 Financing and Economic Constraints

Financial barriers constitute both systemic and household-level impediments. Nigeria's healthcare financing relies heavily on out-of-pocket expenditure, estimated at 74 percent of total health spending (World Bank, 2022). Preventive interventions such as NS are rarely covered by the NHIS, rendering them optional and cost-prohibitive for many families. As reflected in earlier findings, affordability directly shapes parental willingness to screen newborns.

From a macroeconomic standpoint, limited government health expenditure, below the 15 percent Abuja Declaration target, constrains capital investment in preventive infrastructure. When competing priorities such as infectious-disease control and maternal mortality reduction dominate budgetary allocations, hearing health receives negligible funding (Ekechi *et al.*, 2021). Yet, cost-effectiveness analyses consistently show that early detection of HL yields substantial long-term savings through reduced need for specialised education and social-welfare support (WHO, 2021; Olusanya *et al.*, 2022). Integrating hearing screening into insurance benefits packages and donor-supported maternal-child-health projects would thus represent a fiscally prudent policy shift.

5.6.1.5 Data Systems and Information Management

A further structural weakness lies in the paucity of data systems for tracking hearing-screening outcomes. Without digital registries or national surveillance mechanisms, policymakers lack evidence on prevalence, coverage, and follow-up compliance. This data vacuum impedes

planning and evaluation, reinforcing the invisibility of HL within public-health discourse. Olusanya *et al.* (2020) emphasise that reliable data are essential for demonstrating programme impact and attracting sustained funding.

International experiences underscore the value of data integration: in the United Kingdom, the *NNHS Programme* maintains a centralised electronic registry enabling real-time performance monitoring (Halliday *et al.*, 2020). Nigeria's health-information infrastructure, by contrast, remains largely paper-based and fragmented across states. Leveraging digital-health technologies—such as mobile data collection and cloud-based dashboards—could strengthen monitoring while aligning with WHO's (2021) *Global Strategy on Digital Health (2020-2025)*.

5.6.1.6 Quality Assurance and Professional Competence

Beyond structural scarcity, concerns about professional competence and quality assurance undermine confidence in the medical system. Reports of diagnostic inaccuracies, delayed referrals, and inconsistent counselling erode public trust (Jegede, 2020; Bright *et al.*, 2022). These lapses stem partly from the absence of standard operating procedures and certification audits for hearing-screening personnel. Where parents perceive HCPs as careless or unskilled, they may eschew formal screening altogether, opting for traditional remedies.

A robust regulatory framework is therefore indispensable. Establishing national competency standards, periodic accreditation, and continuing professional development would enhance reliability and credibility. Additionally, embedding clinical governance principles, peer review, audit, and accountability, within hospital management could foster a culture of quality improvement (Adeniyi *et al.*, 2021). Such mechanisms have proven effective in raising care standards in other preventive programmes, including immunisation and antenatal care (Ekechi *et al.*, 2021).

5.6.2 Intersecting Structural Inequities

Structural barriers do not operate in isolation; they interact with broader socioeconomic inequities. Poverty, education, and geographic disparities compound each other to create what Farmer (2004) terms “structural violence” in healthcare access. The findings from Port Harcourt demonstrate that rural dwellers and low-income families are least likely to access NNHS because of transportation costs, opportunity costs of time, and limited-service availability. Women with limited education may also lack the confidence to question healthcare advice or demand services (Lawal *et al.*, 2017). These inequalities reflect a distributive injustice in which vulnerability is both a cause and a consequence of health neglect.

Addressing such inequities requires redistributive health policy guided by the principle of universalism. Incorporating hearing screening into existing maternal and child-health outreach, such as immunisation days and community-health extension programmes, could enhance reach without duplicating infrastructure. Moreover, decentralised task-shifting and mobile-screening units could mitigate geographic exclusion. Experiences from rural India and Brazil demonstrate that mobile EHDI services dramatically increase detection rates among underserved populations (Santos *et al.*, 2021).

Finally, governance reforms should ensure equitable resource allocation across regions. The federal structure of Nigeria often results in inconsistent service delivery between states due to fiscal autonomy and political will. Introducing federal matching grants for states that implement hearing screening could incentivise equitable diffusion of services.

5.6.3 Summary of Systemic Barriers

In summary, the systemic and structural obstacles constraining NNHS in Nigeria can be conceptualised across five interrelated domains:

1. **Infrastructure and Technology** – scarcity of equipment, poor maintenance, and urban concentration.
2. **Human Resources** – shortage of audiologists and insufficiently trained primary-care staff.
3. **Governance and Policy** – absence of national legislation and fragmented institutional responsibility.
4. **Financing** – dependence on out-of-pocket spending and minimal insurance coverage.
5. **Information and Quality Systems** – inadequate data management and weak professional accountability.

These domains are underpinned by broader socioeconomic inequities that perpetuate exclusion and erode trust. Overcoming them requires coordinated multisectoral reform that aligns infrastructure investment with capacity building, policy integration, and public-trust restoration.

5.6.4 Socio-Cultural and Behavioural Barriers

While infrastructural and policy barriers constrain the operationalisation of NNHS, socio-cultural and behavioural dynamics fundamentally shape its acceptance and utilisation. Understanding these factors is critical because even the most sophisticated screening infrastructure can be rendered ineffective without public trust, cultural resonance, and behavioural motivation. As highlighted by public health scholars such as Green and Tones

(2010), health interventions operate within a social fabric of beliefs, norms, and meanings that influence how individuals interpret illness and respond to preventive care. In the Nigerian context, these dynamics are particularly salient given the pluralistic health system where traditional, religious, and biomedical paradigms coexist (Jegede, 2020; Kuper *et al.*, 2020).

5.6.4.1 Cultural Beliefs and Misconceptions about HL

Cultural beliefs remain a dominant barrier to the uptake of hearing screening. In many Nigerian communities, HI is still construed through a spiritual or moral lens rather than as a biomedical condition. It is often attributed to supernatural punishment, ancestral transgressions, or malevolent forces (Obasi and Nwogu, 2019; Jegede, 2020). This attribution frames HL not as a health issue warranting medical evaluation but as a condition requiring spiritual or ritual remediation. Such explanatory models directly undermine early detection and intervention, as families are more likely to seek solutions through faith healing, herbal remedies, or traditional rituals rather than hospital-based services.

These findings resonate with a broader body of literature on cultural interpretations of disability in SSA. Mactaggart *et al.* (2018) and Kuper *et al.* (2020) found that traditional cosmologies often link impairments to divine will or witchcraft, resulting in both fatalism and stigma. In such contexts, medical screening can be viewed as irrelevant or even inappropriate. The resulting delay in diagnosis perpetuates preventable disability, underscoring the intersection of culture and health behaviour.

However, it is important to note that these beliefs are not monolithic. Urbanisation, education, and exposure to global media are gradually transforming perceptions of disability and medicine (Ekechi *et al.*, 2021). Yet, the coexistence of traditional and modern explanations, termed “cognitive polyphasia” in social psychology, means that even well-informed parents may oscillate between biomedical and spiritual interpretations (Moscovici, 1984). Public health strategies must therefore move beyond didactic information campaigns towards dialogue-based approaches that respect cultural worldviews while introducing biomedical concepts in relatable terms.

5.6.4.2 Stigma and Social Representation of Deafness

Stigma constitutes a second major behavioural barrier. HL in infants is often perceived as a family disgrace, reflecting poorly on parental virtue or lineage. This stigma drives concealment and avoidance of screening that could publicly confirm impairment. Obasi and Nwogu (2019) describe this as a “culture of silence” surrounding disability, in which social standing takes precedence over health-seeking. Parents may choose denial to preserve their family’s reputation, a phenomenon consistent with Goffman’s (1963) theory of social stigma.

The psychological implications of stigma extend beyond avoidance of screening. Families who internalise shame are less likely to seek rehabilitation or enrol children in early-intervention programmes. This delay amplifies developmental setbacks and emotional distress. Research in Ghana and Uganda corroborates these patterns, demonstrating that stigma inhibits parental engagement with child-health services across various disabilities (Mactaggart *et al.*, 2018). Consequently, tackling stigma is not merely a social issue but a public health imperative.

Community education campaigns must therefore reposition deafness from a moral failing to a manageable medical condition. Studies have shown that inclusive messaging, emphasising success stories of individuals with HI, can counteract fatalism and shame (Adeniyi *et al.*, 2021). Moreover, integrating disability advocacy into maternal health education may normalise conversations about impairment, reducing secrecy and fostering early care-seeking.

5.6.4.3 Religious and Spiritual Influences

Religion constitutes a pervasive influence on health-seeking behaviour in Nigeria. Pentecostal Christianity and Islam dominate the spiritual landscape, and both traditions shape how adherents interpret illness and healing. Faith leaders often serve as moral authorities and custodians of community values. When they promote prayer or deliverance as primary cures, biomedical interventions may be sidelined. Conversely, when religious figures endorse health screening, community compliance improves significantly (Hangulu and Akintola, 2017).

The dual role of religion as both a barrier and facilitator underscore the necessity of strategic engagement. Health promotion frameworks such as the *Religious Health Assets Model* (Olivier *et al.*, 2012) advocate collaboration with faith-based organisations to leverage their trust and influence. In Nigeria, successful HIV prevention and immunisation campaigns have incorporated religious leaders as allies, resulting in higher uptake (Adebayo *et al.*, 2020). A similar model could be adapted for NNHS, with religious leaders disseminating messages that harmonise faith with medical science. This approach can recast screening as an act of divine stewardship, protecting the child's God-given faculties, thereby transforming potential opposition into advocacy.

5.6.4.4 Gender Roles and Decision-Making Dynamics

Gender dynamics also exert a profound influence on the uptake of NNHS. In patriarchal households, health decisions for infants are often made collectively but with the father as the final authority (Ekechi *et al.*, 2021). Even when mothers are primary caregivers, their autonomy to pursue medical interventions may be limited. Studies by Lawal *et al.* (2017) demonstrate that women's economic dependence and restricted mobility significantly constrain their

participation in child-health initiatives. Thus, awareness campaigns targeting only mothers may have limited impact if male partners remain uninformed or sceptical.

Moreover, the emotional burden of blame disproportionately falls on mothers when a child is diagnosed with HL. Societal narratives often frame maternal negligence or moral impurity as causal factors, deepening guilt and avoidance (Jegede, 2020). To counter these gendered dynamics, interventions must adopt family-centred strategies that include fathers, grandparents, and other decision influencers. Evidence from Tanzania and Kenya shows that involving both parents in neonatal health education increases compliance and follow-up rates (Mulwafu *et al.*, 2022). Health communication that frames screening as a collective family responsibility rather than a maternal duty may thus foster more inclusive participation.

5.6.4.5 Health Literacy and Risk Perception

Another behavioural determinant is health literacy, the capacity to obtain, understand, and act on health information. Low literacy levels can distort perceptions of risk and efficacy. According to the HBM (Rosenstock, 1974), individuals are more likely to adopt preventive actions when they perceive susceptibility, severity, and benefit. In the context of hearing screening, parents with limited knowledge may underestimate both the risk of congenital HL and the potential benefits of early intervention. Conversely, they may overestimate procedural risks, fearing that screening devices or sounds could harm the infant.

This misperception is exacerbated by inconsistent communication from HCPs. When counselling is brief, technical, or delivered in unfamiliar terms, comprehension gaps widen (Bright *et al.*, 2022). Enhancing health literacy thus requires more than brochures, it necessitates interpersonal communication strategies that build understanding and trust. Training healthcare workers in plain-language counselling, visual aids, and local dialects can significantly improve parental comprehension. Furthermore, integrating hearing-screening education into antenatal and postnatal classes could normalise the practice as part of standard neonatal care.

5.6.5 Facilitators and Enablers of Change

While barriers dominate the discourse, the study also identifies critical facilitators that can be leveraged to advance NNHS. These facilitators exist at community, institutional, and policy levels, providing strategic entry points for sustainable reform.

5.6.5.1 Community Awareness and Advocacy

Community-driven advocacy represents a foundational enabler for behaviour change. In public health, collective social mobilisation has repeatedly demonstrated the power to reshape

norms and influence policy. The *Community Action for Health* framework emphasises participation, empowerment, and ownership as prerequisites for sustainability (Rifkin, 2014). In the context of NNHS, community education initiatives can demystify HL, promote early care-seeking, and generate social accountability for service provision.

Practical strategies include engaging local opinion leaders, women's associations, and youth groups as peer educators. For instance, Obasi and Nwogu (2019) note that peer-to-peer dialogue in markets and religious gatherings facilitates authentic communication and helps dispel misconceptions more effectively than top-down campaigns. Integrating screening messages into existing maternal and child-health outreach, such as immunisation days and safe motherhood programmes, can extend reach without additional infrastructure. Social media platforms and radio broadcasts also offer scalable avenues for disseminating narratives of hope and success related to hearing rehabilitation.

5.6.5.2 Professional Advocacy and Interdisciplinary Collaboration

HCPs are key facilitators of change, particularly when they act as advocates beyond their clinical roles. Studies in South Africa and Malawi illustrate that interdisciplinary coalitions among audiologists, paediatricians, and public-health practitioners can drive policy development and implementation (Swanepoel and Clark, 2019; Mulwafu *et al.*, 2022). Professional associations, such as the Nigerian Society of Otorhinolaryngology, can leverage their institutional legitimacy to lobby for national EHDI policy integration.

Additionally, interdisciplinary collaboration enhances service efficiency. Incorporating hearing screening into routine immunisation schedules, as piloted in parts of Lagos State, demonstrates how collaboration between audiology and public-health departments can optimise resources (Olusanya *et al.*, 2020). The *One-Stop Child Health Service* model—where multiple screenings are conducted in a single visit, reduces attrition and parental burden. Institutionalising such integrative practices could significantly improve uptake while aligning with WHO's (2021) recommendations for continuum-of-care approaches.

5.6.5.3 Technological Innovation and Digital Health

Technological advancements present transformative potential for overcoming infrastructural and accessibility barriers. Mobile-based audiometry, automated OAE devices, and tele-audiology platforms have proven effective in extending screening to remote settings (Swanepoel *et al.*, 2020; WHO, 2022). In Nigeria, where smartphone penetration exceeds 50 percent (NCC, 2023), digital health interventions could facilitate data capture, follow-up tracking, and remote consultation.

Pilot studies in South Africa using smartphone-based OAE screening achieved over 90 percent accuracy compared with conventional systems (Swanepoel and Clark, 2019). Adapting such innovations within Nigeria's primary-health network could decentralise screening while maintaining quality. Moreover, integrating results into electronic health records would enhance monitoring and accountability. However, technological innovation must be accompanied by training, technical support, and community acceptance to prevent exclusion of digitally marginalised populations.

5.6.5.4 Policy Momentum and Global Alignment

Finally, emerging policy momentum at global and national levels offers a favourable context for scaling NNHS. The *World Report on Hearing* (WHO, 2021) and the *WHA Resolution WHA70.13* (WHA, 2017) call for the integration of ear and hearing care into primary healthcare systems. Nigeria's Federal Ministry of Health has signalled intent to adopt components of these recommendations within its National Ear Care Programme, creating a policy window for advocacy (Olusanya *et al.*, 2022).

Aligning NNHS with broader national priorities, such as Universal Health Coverage (UHC) and the SDGs, can enhance political visibility and funding. As Gilson (2018) argues, embedding new interventions within established policy agendas increases their durability. Framing hearing screening as a child-survival strategy rather than a specialist service may also attract cross-sectoral support from maternal health, education, and disability-rights stakeholders. The convergence of these forces, community demand, professional advocacy, technological innovation, and policy alignment, creates a unique opportunity for transformational change.

5.6.6 Summary of Socio-Cultural Barriers and Facilitators

The discussion above demonstrates that socio-cultural and behavioural barriers are deeply interwoven with systemic deficiencies. Misconceptions, stigma, and religious interpretations shape parental choices, while gender dynamics and health literacy mediate decision-making. Yet, these challenges coexist with facilitators, community engagement, professional leadership, technology, and policy reform, that can drive sustainable change.

The interplay of barriers and facilitators underscores the need for an integrated, culturally sensitive, and system-strengthening approach to EHDI. Addressing socio-cultural determinants requires participatory health promotion grounded in respect for local beliefs, while systemic reform must institutionalise accountability and quality. Together, these dimensions form the foundation for a comprehensive framework to ensure that every child in Nigeria receives timely, equitable, and compassionate hearing care.

5.6.7 Policy and Strategic Implications

The complex interplay of systemic, socio-cultural, and behavioural determinants identified in this study underscores the urgent need for a coordinated, policy-driven approach to EHDI in Nigeria. Effective implementation requires integration within existing health frameworks, strengthened governance, sustainable financing, and a deliberate effort to rebuild public trust in the medical system. These policy and strategic implications extend beyond hearing care, offering insights into broader health-system reform and equity in preventive healthcare.

5.6.7.1 Integration into National Health Policy and Child-Health Frameworks

One of the most critical policy imperatives is the formal inclusion of NNHS within Nigeria's national child-health policies. Despite multiple feasibility studies and advocacy efforts, EHDI remains largely excluded from the *National Strategic Health Development Plan II (2018–2022)* and the IMNCH strategy (Olusanya and Newton, 2018; Ekechi *et al.*, 2021). This omission reflects the historical neglect of sensory health within broader preventive-care agendas. To align with WHO's (2021) *World Report on Hearing* and SDG 3 ("Ensure healthy lives and promote well-being for all at all ages"), Nigeria must institutionalise hearing screening as a routine component of neonatal and infant care.

Embedding EHDI within existing maternal and child health programmes can generate economies of scale and reduce duplication. Integration into antenatal education, delivery-room protocols, immunisation clinics, and early-childhood surveillance would ensure that screening becomes standard practice rather than a specialist intervention (Olusanya *et al.*, 2022). Internationally, countries such as Brazil and India have achieved substantial progress by adopting a "universal coverage through integration" model, in which hearing screening is co-delivered with routine postnatal services (Santos *et al.*, 2021). A similar approach would not only improve coverage but also enhance cost-effectiveness by leveraging existing service infrastructure and personnel.

5.6.7.2 Legislative and Regulatory Frameworks

Policy integration alone is insufficient without accompanying legislative and regulatory mechanisms. Nigeria's federal structure requires a national policy directive that establishes legal accountability for EHDI implementation. Legislation should mandate universal screening, define performance standards, and allocate dedicated funding. Without statutory backing, initiatives risk remaining pilot projects vulnerable to administrative turnover.

Legislation can also protect consumer rights by ensuring quality assurance, data privacy, and equitable access. Regulatory bodies such as the Medical and Dental Council of Nigeria

(MDCN) and the Health Facility Monitoring and Accreditation Agency (HEFAMAA) could be empowered to oversee EHDI standards and accreditation. Establishing a *National NNHS Committee*, comprising audiologists, paediatricians, public health experts, and civil society representatives, would enhance governance coherence and foster stakeholder accountability.

Legally enshrined mandates have proven effective elsewhere. The United States' EHDI Act of 2017, for example, provides federal oversight and funding mechanisms that guarantee consistency across states (White, 2020). While Nigeria's health system differs structurally, such legislative precedent demonstrates that enforceable policy can transform screening from a discretionary to a normative practice.

5.6.7.3 Financing and Economic Sustainability

Financial sustainability is central to EHDI expansion. As discussed earlier, the dominance of out-of-pocket spending and limited insurance coverage constitute substantial barriers. Therefore, financing reform must occur at two levels: institutional and household. At the institutional level, the Federal Ministry of Health should earmark funds for EHDI under preventive and child-health budgets, supported by partnerships with donor agencies, corporate social-responsibility programmes, and global health funds. Allocating a defined percentage of the Basic Health Care Provision Fund (BHCPF) to sensory health could secure recurrent financing (World Bank, 2022).

At the household level, integrating hearing screening into the National Health Insurance Authority (NHIA) benefit package would alleviate financial burden and promote equity. In addition, innovative financing mechanisms such as social health insurance pools and micro-insurance schemes could be explored for informal-sector families. Economic modelling by WHO (2021) indicates that every US\$1 invested in hearing screening and early intervention yields a US\$16 return through improved educational attainment and productivity—an argument that policymakers can leverage to justify initial capital expenditure.

5.6.7.4 Health Workforce Development and Training

To ensure quality and continuity, Nigeria must urgently expand and strengthen its ear and hearing-care workforce. This entails both short-term task-sharing measures and long-term capacity building. Incorporating audiology modules into nursing, midwifery, and community health curricula would create a broad base of competent screeners (Swanepoel *et al.*, 2020). Meanwhile, establishing postgraduate programmes in audiology and speech-language pathology at Nigerian universities would build a pipeline of specialists for leadership, research, and training roles.

Continuous professional development (CPD) should be institutionalised through accreditation systems that reward competency-based learning. The use of blended learning and e-training platforms could overcome geographic constraints and cost barriers, particularly for rural healthcare workers (Adeniyi *et al.*, 2021). Professional associations should also collaborate with international partners to provide mentorship and access to global best practices. Strengthening the workforce is not merely a technical necessity but a social investment—enhancing confidence among parents and legitimising hearing health as a professional domain within Nigeria’s health landscape.

5.6.7.5 Community Engagement and Health Communication

Policy frameworks must be complemented by culturally responsive communication strategies. As the findings revealed, knowledge gaps and misconceptions about HL remain widespread. Effective public-health communication should therefore blend biomedical information with local cultural narratives, using familiar idioms and community influencers. The HBM and SEM emphasise that information alone is insufficient; interventions must target interpersonal, community, and policy levels simultaneously (Rosenstock, 1974; McLeroy *et al.*, 1988).

In practice, this means engaging community leaders, religious figures, and parent networks as co-educators. Faith-based organisations—trusted by a majority of Nigerians, can serve as communication conduits that reconcile medical and spiritual worldviews (Hangulu and Akintola, 2017). Mass media campaigns should be complemented by interactive outreach, such as community drama, radio talk shows, and testimonial storytelling, to humanise HL and reduce stigma. Furthermore, involving people with lived experience of deafness in advocacy can shift social perceptions and foster inclusion.

5.6.7.6 Data Monitoring and Evaluation (M&E) Systems

Robust M&E systems are critical for policy accountability and continuous improvement. Establishing a national EHDI registry would enable real-time data collection on screening coverage, outcomes, and follow-up compliance. Such systems should be digital, interoperable with the District Health Information System 2 (DHIS2), and accessible to both public and private facilities.

Data transparency enhances credibility and fosters evidence-based decision-making. When policymakers can track performance metrics, resource allocation becomes more rational and responsive (Halliday *et al.*, 2020). Moreover, longitudinal data can inform epidemiological research, revealing patterns of congenital HL and social determinants. Capacity building for health-information officers and investment in digital infrastructure are prerequisites for achieving these outcomes.

At a macro level, integrating EHDI indicators into Nigeria's National Health Management Information System (NHMIS) would align hearing screening with other key performance indicators under UHC. The inclusion of disaggregated data, by gender, region, and socioeconomic status, would also support equity-focused planning.

5.6.7.7 Building Public Trust and Professional Accountability

Rebuilding trust in the medical system is both an ethical and strategic priority. As identified in the findings, perceptions of carelessness, corruption, and diagnostic inaccuracy among HCPs contribute to public scepticism. Trust is foundational to compliance, and its erosion can nullify even well-designed interventions (Gilson, 2018).

To restore credibility, healthcare institutions must strengthen clinical governance structures. Regular audits, peer reviews, and incident-reporting systems should be institutionalised to enhance accountability. Transparency in communication, explaining procedures, risks, and outcomes, can also bridge the psychological distance between providers and parents. Furthermore, professional ethics education should be reinforced within training curricula to cultivate empathy, integrity, and cultural competence among practitioners.

Public recognition programmes, highlighting hospitals or practitioners that demonstrate excellence in child screening, could further incentivise ethical behaviour and rebuild confidence. Over time, these measures can transform the health system from one perceived as negligent to one regarded as competent and trustworthy.

5.6.8 Strategic Alignment with Global Health Frameworks

The advancement of EHDI aligns with several global commitments and frameworks. The WHO's (2021) *World Report on Hearing* explicitly calls for the integration of ear and hearing care into primary health systems, supported by capacity building, community engagement, and universal coverage. Nigeria's alignment with these global directives would not only enhance domestic outcomes but also strengthen its position within international health partnerships.

Moreover, EHDI contributes directly to the achievement of the SDGs—specifically SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 10 (Reduced Inequalities). Early detection of HL facilitates timely intervention, enabling children to develop language skills essential for educational participation and social inclusion. Thus, hearing screening transcends the biomedical domain; it is a driver of human capital development and social justice.

Regional frameworks, such as the African Union's *Agenda 2063: The Africa We Want*, emphasise inclusive growth and people-centred development. Incorporating EHDI into national health strategies would align Nigeria's actions with these continental priorities, reinforcing commitments to equity and resilience. International collaboration, including partnerships with WHO, UNICEF, and NGOs like CBM Global Disability Inclusion, can provide technical assistance, funding, and capacity support.

5.6.9 Implementation Roadmap and Multi-Sectoral Collaboration

Translating policy into practice demands a structured implementation roadmap. A phased approach is recommended, beginning with pilot integration in tertiary hospitals, followed by scale-up to secondary and primary facilities. Each phase should include defined benchmarks, training, and evaluation mechanisms.

Multi-sectoral collaboration is essential. Ministries of Health, Education, and Information must coordinate to ensure that health promotion, early-childhood education, and public communication reinforce each other. Collaboration with academic institutions will be vital for research and workforce training, while partnerships with private-sector stakeholders—such as telecommunications firms, can support digital innovations and community outreach.

Civil society and parent advocacy groups should be institutionalised as partners rather than beneficiaries, ensuring that implementation remains participatory and accountable. The adoption of a “whole-of-society” approach reflects global best practices in sustainable health interventions (Rifkin, 2014; WHO, 2022).

This discussion has highlighted the intricate interdependencies between systemic, cultural, and behavioural factors influencing NNHS in Nigeria. Structural barriers—ranging from inadequate infrastructure to fragmented governance—intersect with cultural beliefs, stigma, and limited health literacy to impede progress. Yet, the same environment harbours immense potential for transformation through community mobilisation, professional advocacy, technological innovation, and policy alignment.

The findings affirm that sustainable EHDI implementation requires a holistic systems approach grounded in equity, cultural sensitivity, and participatory governance. Integrating hearing screening into national health policies and existing maternal-child health frameworks will institutionalise early detection as a public-health norm rather than a privileged service. Legislative backing, dedicated financing, workforce development, and robust data systems will ensure sustainability and accountability.

Most critically, rebuilding public trust in the medical system through professional competence and transparent communication will determine long-term success. As global health discourse shifts towards inclusivity and preventive care, Nigeria has both the moral and strategic imperative to prioritise hearing health as part of its national development agenda. The integration of NNHS into routine child healthcare will not only prevent avoidable disability but also affirm the country's commitment to every child's right to health, dignity, and full participation in society.

5.7 Theoretical and Comparative Interpretations of Parental and Professional Perspectives on NNHS

The preceding sections established that NNHS in Nigeria is constrained by structural limitations, socio-cultural influences, and governance gaps, yet it also exists within a field of evolving opportunities for integration and reform. To deepen understanding of these dynamics, it is crucial to interpret the findings through established theoretical and comparative frameworks. Doing so enables the study not merely to document barriers and facilitators, but to contribute conceptually to how parental decision-making, professional attitudes, and systemic structures intersect in shaping health behaviour.

This section therefore critically examines the results through the lens of behavioural and sociological health theories, situates the findings within broader African and global comparative contexts, and elucidates implications for practice, education, and future research. The discussion demonstrates that NNHS is not simply a clinical service but a socially and psychologically mediated phenomenon that requires multi-dimensional interpretation and intervention.

5.7.1 Theoretical Interpretation of Parental and Professional Attitudes

5.7.1.1 *The HBM and Risk Perception*

The *HBM* remains one of the most influential frameworks for explaining preventive health behaviour (Rosenstock, 1974; Becker, 1978). The findings from this study align closely with the model's constructs, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. Parents' limited understanding of congenital HL and the perception that it is rare or non-severe illustrate low *perceived susceptibility* and *severity*. These cognitive appraisals directly reduce motivation to pursue screening. Similarly, misconceptions regarding safety, invasiveness, and efficacy of hospital-based screening reduce *perceived benefits* while increasing *perceived barriers*.

HCPs' attitudes also reflect the HBM. While they often recognise the benefits of early detection, their reservations about quality assurance, inadequate training, and equipment shortages diminish self-efficacy and act as barriers to recommending screening. The HBM thus provides a dual explanatory mechanism: it clarifies why parents may underutilise services and why professionals may hesitate to promote them robustly.

However, as Glanz *et al.* (2015) note, the HBM's individualistic orientation limits its ability to account for the social and cultural context shaping these perceptions. The beliefs described in this study—such as attributing HL to spiritual or moral causes, are socially constructed and sustained through collective narratives. Therefore, while the HBM captures proximate cognitive mechanisms, it must be complemented by sociocultural theories that situate health decisions within broader belief systems and social relations.

5.7.1.2 The TPB and Intentionality

The TPB (Ajzen, 1991) provides further insight into the intentional processes underpinning health-seeking behaviour. According to the TPB, intention to act is determined by attitudes toward the behaviour, subjective norms, and perceived behavioural control. Parents' intention to screen their newborns is thus influenced not only by their attitudes (beliefs about effectiveness) but also by social norms (what peers, relatives, or religious leaders expect) and control beliefs (perceived accessibility and affordability).

The findings show that when influential community members, such as religious leaders or elder family figures, endorse traditional rather than medical pathways, subjective norms inhibit screening uptake. Conversely, where parents perceive screening as socially approved, such as in urban, educated communities, intention strengthens. The TPB framework also explains the significant role of control beliefs: even when parents value screening, limited access, cost, and lack of information reduce perceived control, thereby weakening intention.

For HCPs, the TPB explains hesitancy to recommend screening in contexts where institutional support, equipment, or follow-up facilities are lacking. Their perceived behavioural control is low, producing ambivalence despite positive professional attitudes. This interpretation underscores the importance of reinforcing both individual agency and enabling environments in designing behaviour-change interventions.

5.7.1.3 The SEM and Multi-Level Determinants

While both the HBM and TPB highlight individual and interpersonal factors, the SEM (McLeroy *et al.*, 1988) expands the analytic scope to include organisational, community, and policy-level influences. The SEM provides the most comprehensive framework for interpreting the findings

of this research, which demonstrate the interaction of personal beliefs, institutional systems, and societal norms.

At the individual level, knowledge gaps and health literacy affect parents' and professionals' perceptions. At the interpersonal level, family dynamics, gender roles, and religious influence determine decision-making. At the organisational level, hospital resources, professional competence, and institutional policies either facilitate or constrain screening. Finally, at the policy level, national governance and financing structures define the boundaries of feasibility. The SEM thus illustrates that behaviour change cannot be isolated from systemic reform; both must be pursued concurrently.

This theoretical integration highlights that NNHS in Nigeria is embedded within a multilayered ecosystem of determinants. Policy interventions targeting one level—such as individual education—will remain ineffective without parallel action at institutional and structural levels. Hence, an ecological framework should guide the development of holistic public-health strategies that align micro-level motivations with macro-level reforms.

5.7.1.4 Cultural Theory and Symbolic Interactionism

The study's findings also call for sociological interpretation, particularly through *Cultural Theory* (Douglas, 1986) and *Symbolic Interactionism* (Blumer, 1969). Cultural theory posits that people's risk perceptions and health choices are shaped by shared cultural biases, hierarchical, egalitarian, individualist, or fatalist. In many Nigerian communities, hierarchical and fatalist orientations dominate health decisions are mediated by authority figures, and outcomes are viewed as predetermined. This orientation explains deference to traditional healers or spiritual authorities and the reluctance to question their interpretations.

From a symbolic interactionist perspective, HL is not merely a biological event but a social symbol associated with moral and familial identity. Meanings are constructed through social interaction, parents internalise stigma when community members equate deafness with curse or shame. The act of screening itself carries symbolic meaning: for some, it signals faith in modern medicine; for others, it may signify distrust of cultural heritage. Recognising these symbolic dimensions is essential for developing culturally sensitive health communication that reframes screening as compatible with, rather than contradictory to, local values.

5.7.2 Comparative Contexts and Global Parallels

5.7.2.1 Sub-Saharan Africa

Comparative evidence from other SSA countries reveals both shared constraints and divergent trajectories. South Africa stands out as the only country in the region with relatively

structured EHDI programmes, largely confined to urban tertiary hospitals (Swanepoel and Clark, 2019). Challenges there, such as shortage of audiologists and limited follow-up compliance—mirror those in Nigeria, yet policy coordination and advocacy have achieved more tangible progress. Similarly, Kenya and Malawi have implemented pilot community-based screening using trained nurses and mobile technology with promising results (Mulwafu *et al.*, 2022). These examples demonstrate that context-sensitive adaptation, rather than wholesale replication of high-income models, is key to sustainability.

In contrast, countries with weaker health governance, such as Ghana or Uganda, face similar issues of limited policy integration, low awareness, and cultural resistance (Mactaggart *et al.*, 2018). Comparative analysis therefore situates Nigeria within a regional pattern of partial implementation constrained by systemic and cultural factors. However, Nigeria's population size, economic capacity, and academic resources provide a unique opportunity for regional leadership. By institutionalising EHDI, Nigeria could serve as a continental model, catalysing cross-border learning and South–South collaboration in hearing health.

5.7.2.2 Global Comparisons

In high-income contexts such as the United Kingdom, United States, and Australia, UNHS is established policy, yielding early detection rates above 95% (Halliday *et al.*, 2020; White, 2020). These programmes are characterised by strong legislative mandates, dedicated funding, comprehensive data systems, and public awareness. However, even in these settings, challenges such as follow-up attrition and social inequities persist, underscoring that technological sophistication does not eliminate behavioural barriers (Korver *et al.*, 2017).

The contrast between these systems and Nigeria highlights the central role of governance, financing, and trust rather than technology per se. Where institutions are transparent, adequately resourced, and accountable, public participation follows. Hence, Nigeria's challenge is less a lack of knowledge about screening than a deficit of institutional alignment and societal confidence. Adapting lessons from international models must therefore prioritise governance strengthening and social trust-building rather than mere importation of technology.

5.7.3 Implications for Practice

5.7.3.1 Interdisciplinary Collaboration

The findings emphasise that effective EHDI requires collaboration among multiple professional domains. Audiologists, paediatricians, nurses, community-HCPs, and public-health practitioners must work in tandem. Each group holds unique competencies:

audiologists bring diagnostic expertise; paediatricians provide clinical oversight; community-HCPs enable outreach and follow-up; and public-HCPs ensure programme evaluation. Building interdisciplinary teams promotes efficiency and fosters shared ownership (Swanepoel *et al.*, 2020).

Collaborative practice also enhances counselling quality. When parents receive consistent information from multiple professionals, confidence increases and attrition declines. Conversely, fragmented communication, as observed in some hospitals, breeds confusion and mistrust. Training curricula should therefore emphasise interprofessional education, developing competencies in teamwork, communication, and ethical practice (Adeniyi *et al.*, 2021).

5.7.3.2 Health Promotion and Behaviour Change Communication

Translating the study's insights into practice requires innovative behaviour-change communication. Traditional top-down health education models, predicated on transferring knowledge, are inadequate for deeply rooted cultural beliefs. Participatory models that engage communities in dialogue, storytelling, and co-creation of meaning are more effective (Green and Tones, 2010).

Health promotion strategies should employ culturally resonant metaphors and trusted intermediaries. For instance, framing hearing screening as a “protective blessing” or “child-safety check” can recontextualise it within existing belief systems. Local dialect radio programmes, community drama, and mother-to-mother support groups can reinforce these messages. In parallel, mass media campaigns should normalise hearing screening by integrating it into narratives of modern parenthood and responsible caregiving.

5.7.3.3 Professional Education and Continuing Competence

HCPs' concerns regarding standardisation and safety highlight the need for structured continuing education. Institutionalising CPD in audiology and child screening will improve confidence and competence. Universities and teaching hospitals should integrate EHDI modules into postgraduate medical training, ensuring that new generations of clinicians view hearing screening as integral to paediatric practice.

Furthermore, the establishment of national training centres, perhaps through university partnerships, would create a sustainable professional pipeline. Online and blended-learning modalities could extend reach to rural areas. Professional certification and licensure must also be updated to include EHDI competencies, ensuring accountability and raising practice standards.

5.7.4 Implications for Research

5.7.4.1 Evidence Gaps and Research Priorities

While the current study provides valuable qualitative insight into attitudes and perceptions, significant evidence gaps remain. Quantitative epidemiological data on congenital and early-onset HL in Nigeria are sparse. Establishing population-based prevalence studies is therefore essential for accurate planning and resource allocation. Additionally, longitudinal research tracking developmental and educational outcomes of screened versus unscreened children would substantiate the long-term benefits of EHDI.

Research on the cost-effectiveness of screening in Nigerian contexts would further strengthen advocacy. International models demonstrate high return on investment (WHO, 2021), but local validation is necessary for policymaking. Furthermore, behavioural research employing mixed-methods design could explore the relative influence of cultural, economic, and gender-related factors on screening decisions.

Implementation science also offers promising directions. Evaluating pilot programmes under real-world conditions can identify operational barriers, refine protocols, and generate local evidence for scale-up. Collaborative research between universities, ministries, and NGOs would enhance impact, while community-based participatory research could ensure that interventions remain culturally congruent and socially accepted.

5.7.4.2 Technological Innovation and Digital Health Research

Given the increasing accessibility of mobile technologies, research should investigate digital innovations such as smartphone-based audiometry, tele-audiology, and mobile data collection. Pilot studies in South Africa and India demonstrate feasibility, accuracy, and cost-efficiency (Swanepoel and Clark, 2019; Santos *et al.*, 2021). Evaluating such models in Nigerian rural settings could inform scalable solutions.

Additionally, studies should assess the acceptability of digital interventions among both parents and providers, considering factors such as literacy, privacy, and user trust. Integrating digital tools into national health information systems would also facilitate real-time data analytics, improving programme monitoring and policy responsiveness.

5.7.5 Ethical and Social Considerations

Implementing widespread screening raises ethical questions that must be explicitly addressed. Informed consent, confidentiality, and follow-up obligations are central concerns. Parents must be adequately informed about the purpose, procedure, and implications of

screening results. In low-literacy settings, this requires simplified communication and culturally appropriate counselling.

Ethical practice also demands equity. Screening should not exacerbate social disparities by privileging urban populations or those who can afford private services. The principle of justice, as articulated in the *Belmont Report* (1979), mandates fair distribution of healthcare benefits. Therefore, policymakers must ensure that resource allocation prioritises marginalised communities.

Furthermore, there is an ethical duty to guarantee continuity of care. Screening without subsequent intervention risks causing psychological distress and violating beneficence. Programmes must therefore establish clear referral pathways, subsidised treatment, and family support systems. Addressing these ethical dimensions will reinforce public confidence and align EHDI with international standards of child rights and public-health ethics.

The theoretical and comparative analyses presented in this section demonstrate that the success of NNHS depends on multi-level interactions among beliefs, behaviours, institutions, and policies. The application of behavioural models such as the HBM and TPB explains individual motivations and constraints, while ecological and sociocultural theories reveal the collective meanings and structural conditions that shape decision-making.

Comparative evidence situates Nigeria within a regional and global continuum, sharing challenges with other LMICs but possessing distinctive potential for leadership and innovation. The implications for practice, research, and ethics underscore the need for an integrated, participatory, and evidence-driven approach.

Ultimately, NNHS represents a microcosm of Nigeria's broader public-health transformation. Its challenges expose the fractures of health inequity, while its possibilities exemplify the power of prevention, education, and policy coherence. The future of EHDI in Nigeria, and indeed the health of its children, will depend on whether systemic reform, cultural sensitivity, and scientific integrity can converge to realise the vision of universal, equitable, and compassionate care.

5.8 Implications for Theory, Policy, and Practice

This final discussion section integrates the empirical insights derived from the study with existing theoretical, practical, and policy frameworks to provide a comprehensive understanding of NNHS and its contextual realities within Nigeria. Building on earlier sections that explored parental and professional perspectives, systemic and socio-cultural barriers, and

the theoretical underpinnings of behaviour and decision-making, this synthesis articulates the overarching implications for health theory, policy formulation, professional practice, and the broader field of public health. The objective is to move beyond descriptive findings towards a critical interpretation of their significance for advancing knowledge, reforming health systems, and improving the lives of children and families affected by HL.

Through the triangulation of parental and HCP viewpoints, the study underscores that attitudes and perceptions towards NHS are multidimensional and interdependent. They are shaped not only by individual awareness and cultural belief systems but also by institutional performance, social structures, and policy environments. This synthesis thus situates the phenomenon of NNHS within a continuum that links personal agency, professional responsibility, and societal governance. In doing so, it responds to the call by the WHO (2021) for context-sensitive, equitable, and sustainable hearing health systems within LMICs.

5.8.1 Synthesis of Core Insights

The study's findings reveal a layered landscape of understanding and engagement with NNHS. Across both parental and professional perspectives, three overarching dynamics emerge: (1) inadequate awareness and health literacy; (2) socio-cultural and institutional barriers; and (3) cautious optimism and readiness for change where information and access are improved. These dynamics are interconnected, demonstrating that attitudes towards screening are neither fixed nor wholly resistant but evolve in response to knowledge, trust, and systemic opportunity.

A persistent gap in public knowledge of NHS underscores the limited reach of preventive-health education in Nigeria's maternal and child-health sector. Parents generally associate newborn health checks with visible or physical conditions and rarely conceive of sensory assessment as part of routine care. This absence of conceptual integration reflects both informational and structural deficiencies, few healthcare facilities offer the service, and those that do seldom publicise it. As shown in similar studies from Ghana (Agyemang *et al.*, 2019) and Kenya (Mulwafu *et al.*, 2022), awareness is a strong predictor of screening uptake.

HCPs, while more informed, often express ambivalence grounded in pragmatic concerns: insufficient training, lack of equipment, and inadequate quality assurance mechanisms. This aligns with global literature highlighting workforce and resource constraints as major impediments to scaling EHD in LMICs (Swanepoel and Clark, 2019; Olusanya *et al.*, 2022). Professionals' attitudes thus mirror institutional capacity: when systems fail to guarantee reliability and follow-up, confidence in service delivery declines.

Despite these constraints, both parents and professionals exhibit openness to NHS when presented with credible information and assurance of safety. This suggests a latent readiness within the population that can be mobilised through education, transparency, and inclusive governance. The data therefore point not to cultural fatalism, as once assumed (Olusanya and Newton, 2018), but to rational responses shaped by context, responses that can be transformed through sustained engagement and systemic reform.

5.8.2 Implications for Theory Development

The study extends theoretical understanding of preventive health behaviour by illustrating how psychological, sociological, and structural frameworks intersect within the Nigerian context. Classical models such as the *HBM* (Rosenstock, 1974) and the *TPB* (Ajzen, 1991) explain some aspects of parental motivation but fail to account fully for the influence of collective belief systems, institutional trust, and social power hierarchies that pervade decision-making in collectivist societies.

This research therefore supports a contextual adaptation of the SEM (McLeroy *et al.*, 1988) that integrates cultural and governance dimensions. It demonstrates that parental intention is not simply a function of perceived risk or benefits but of relational trust, trust in healthcare institutions, professionals, and community narratives. In this sense, hearing screening decisions are simultaneously individual and relational acts, embedded within networks of social validation.

Furthermore, the findings contribute to the growing discourse on *structural competency* in global health (Metzl and Hansen, 2014). They reveal how macro-level inequalities, such as urban–rural disparities, privatisation of care, and underfunded public hospitals, shape micro-level behaviours and beliefs. A mother’s decision to forego screening may reflect not ignorance but structural exclusion. Integrating structural competency into theoretical frameworks acknowledges these power dynamics, encouraging models that view health behaviour as both socially situated and politically produced.

From a professional standpoint, the study advances theoretical insights into *professional identity and moral agency*. The ambivalence expressed by healthcare workers regarding quality assurance and ethical accountability demonstrates how professional motivation is shaped by institutional culture. As Freidson (2001) argues, professionalism thrives when practitioners are empowered by systems that value autonomy, standards, and service ethics. Where systems fail, professional ideals erode. Thus, the study invites a re-theorisation of HCPism in LMIC contexts, not as static adherence to biomedical norms but as adaptive negotiation between moral duty, institutional capacity, and social expectation.

5.8.3 Implications for Policy and Health-System Reform

5.8.3.1 Towards Institutionalisation of EHDI

The evidence indicates that sustainable NNHS requires institutionalisation through policy, not ad hoc pilot programmes. The absence of national mandates perpetuates fragmentation and inequity. As emphasised by Olusanya *et al.* (2021), institutionalisation must be underpinned by three policy pillars: governance, financing, and integration.

Governance entails developing a coherent national framework defining standards, roles, and accountability mechanisms. A *National Hearing Health Policy* should delineate screening protocols, referral pathways, and data management structures aligned with the National Health Information System (NHIS). Financing must be sustained through inclusion in the BHCPF and coverage under the NHIA to prevent out-of-pocket burden. Integration requires embedding hearing screening within maternal and child health services, ensuring that every birth, whether in tertiary, secondary, or primary facilities, triggers screening as part of postnatal care.

Such institutionalisation parallels successful models in Brazil and India, where integration within immunisation and neonatal programmes has increased coverage and reduced late detection (Sharma *et al.*, 2020; Santos *et al.*, 2021). However, adaptation to Nigeria demands a decentralised approach, leveraging state ministries of health and local governments to tailor implementation to context while maintaining national standards.

5.8.3.2 Regulatory and Ethical Frameworks

Beyond policy adoption, a regulatory framework is needed to ensure quality assurance and protect patients' rights. Regulation should establish minimum training requirements for screeners, define referral and follow-up standards, and enforce compliance through accreditation and audits. Ethical guidelines must safeguard informed consent and confidentiality, aligning with the *Nigerian Code of Health Research Ethics* and WHO principles of child rights (WHO, 2021).

Moreover, transparency mechanisms, such as public reporting of screening outcomes—can build community trust. Accountability, when coupled with open communication, transforms perceptions of negligence into confidence in healthcare integrity (Gilson, 2018). The study thus advocates for a regulatory ethos grounded in trust-building and participatory oversight rather than punitive control.

5.8.3.3 *Equity and Universal Access*

Policy reform must explicitly address social inequity. Urban bias in healthcare distribution marginalises rural populations, deepening disparities. Evidence from WHO (2022) indicates that community-based screening, supported by mobile units and tele-audiology, can overcome these barriers cost-effectively. Nigeria can adapt such models by training community-health extension workers as first-line screeners supervised remotely by audiologists.

Equity also extends to disability inclusion. Early detection should be linked to accessible rehabilitation and inclusive education. A national EHDI framework should therefore coordinate with the Ministries of Education and Social Development to ensure that children identified with HL receive continuous support. This holistic approach aligns with the SDG principle of *leaving no one behind* and transforms hearing health from a narrow medical issue into a broader human rights agenda.

5.8.4 **Implications for Practice and Education**

5.8.4.1 *Professional Training and Interdisciplinary Collaboration*

A crucial implication of the findings is the urgent need for comprehensive training and interprofessional collaboration. Incorporating audiology and early screening modules into undergraduate nursing, midwifery, and paediatric curricula will create a skilled workforce capable of identifying and referring suspected cases. CPD frameworks should include competency-based certification in EHDI, supported by partnerships between universities, teaching hospitals, and professional bodies (Adeniyi *et al.*, 2021).

Interdisciplinary collaboration enhances both quality and efficiency. In well-functioning systems, screening involves multiple cadres, midwives, audiologists, paediatricians, and community-HCPs, operating as an integrated team. This model has been shown to improve detection and follow-up rates in other LMICs (Mulwafu *et al.*, 2022). Institutionalising teamwork within Nigerian health facilities will require redefining job descriptions, strengthening supervision, and fostering a culture of shared accountability.

5.8.4.2 *Health Promotion and Parental Engagement*

Practice transformation also depends on effective health communication. As this study demonstrated, awareness deficits and cultural misconceptions remain primary obstacles. Health promotion efforts must therefore move beyond information dissemination to participatory engagement. Employing the principles of *health literacy* (Nutbeam, 2008), communication materials should be accessible, visual, and tailored to linguistic diversity.

Community mobilisation through traditional leaders, women's associations, and faith-based networks can reshape norms surrounding HL and screening. Public-health campaigns should normalise screening as an act of responsible parenting rather than a response to suspected illness. Additionally, incorporating the voices of people with lived experience of HL can humanise the issue and challenge stigma. Such inclusive messaging not only increases uptake but also promotes empathy and social cohesion.

5.8.5 Broader Public Health Significance and Future Agenda

5.8.5.1 Hearing Screening as a Gateway to Equity and Prevention

The implications of NNHS transcend otological health. Early detection of HI serves as a gateway to educational equity, social inclusion, and economic productivity. Children diagnosed early are more likely to achieve age-appropriate language development, academic success, and employability (WHO, 2021). In contrast, delayed detection perpetuates cycles of disadvantage, school exclusion, unemployment, and social marginalisation.

Thus, NHS should be conceptualised not merely as a medical procedure but as a public-health intervention contributing to human capital development. Embedding hearing screening within Nigeria's UHC agenda would demonstrate a commitment to preventive and inclusive care, aligning with the African Union's Agenda 2063 and the SDGs (i.e., SDG 3, 4, and 10).

5.8.5.2 Building Research Capacity and Evidence-Informed Policy

Sustaining progress requires robust evidence generation. The establishment of national data registries and partnerships between academic institutions and health ministries would facilitate continuous evaluation. Research capacity must also be strengthened through postgraduate training, interdisciplinary collaboration, and funding for locally led studies. Nigeria's universities, with their emerging audiology and public-health programmes, are well positioned to anchor such efforts.

Long-term, a national *Hearing Health Observatory* could coordinate data collection, policy translation, and knowledge dissemination. This would institutionalise learning and ensure that policy evolves with evidence. As recent literature underscores (Halliday *et al.*, 2020; White, 2020), continuous M&E are hallmarks of successful EHDl systems worldwide.

The synthesis presented in this section underscores that improving attitudes and uptake of NNHS in Nigeria requires a paradigm shift, from episodic, individual-level interventions to systemic, intersectoral, and participatory strategies. The findings reveal that while cultural beliefs and limited awareness pose real challenges, the more profound barriers are institutional: underinvestment, policy neglect, and erosion of trust in healthcare systems.

Addressing these structural constraints, alongside culturally attuned education, will catalyse behavioural change and programmatic sustainability.

Theoretically, the study extends existing behavioural models by embedding them within an ecological and cultural governance framework. It redefines parental decision-making as an act situated within networks of trust, meaning, and systemic constraint. Practically, it calls for the institutionalisation of EHDI within national health policy, capacity building for the health workforce, and integration of community participation. Policy-wise, it aligns Nigeria with global commitments to equity and early intervention, advancing the WHO (2021) call for universal hearing care.

Ultimately, this synthesis affirms that NNHS embodies the essence of preventive and equitable healthcare. Its successful adoption will not only safeguard auditory health but also symbolise Nigeria's broader transition towards a resilient, inclusive, and evidence-based health system, one in which every child, regardless of background, is granted the opportunity to hear, learn, and thrive.

5.9 Chapter Summary

The chapter provides an extensive interpretation of the findings, situating them within the broader theoretical, empirical, and contextual literature. The discussion explores how the attitudes and perceptions of parents and healthcare stakeholders shape access to NNHS in Port Harcourt, Nigeria. Through an interpretivist lens, the chapter elucidates how cultural beliefs, socio-economic limitations, and institutional weaknesses interact to influence the acceptance, accessibility, and sustainability of screening programmes.

The chapter opens with an examination of how participants understood and explained NHL. Many parents demonstrated limited biomedical knowledge and relied heavily on traditional and spiritual interpretations, often perceiving HL as a manifestation of divine punishment, ancestral retribution, or witchcraft. This worldview reinforced stigma and delayed the pursuit of medical intervention. Such perceptions are consistent with previous African studies indicating that health and illness are often viewed through a spiritual framework. As a result, spiritual causation narratives contribute to social exclusion and the underutilisation of preventive health services. The discussion argues that the persistence of these beliefs underscores the need for culturally sensitive health education that respects local traditions while challenging harmful misconceptions.

Parental identification of HL was largely based on observable developmental delays or behavioural signs rather than proactive screening. Many parents only recognised possible HI

when their children failed to respond to sound or showed speech delays. This reactive approach reflects broader tendencies in low- and middle-income contexts, where preventive healthcare practices are often secondary to curative responses. HCPs corroborated this challenge, attributing the delayed detection of HL to limited public awareness and insufficient training of frontline healthcare workers in neonatal hearing assessment. These gaps in knowledge and capacity perpetuate delayed diagnosis, undermining the benefits of early intervention.

In examining parental attitudes toward NNHS, the discussion notes a spectrum of responses. While some parents expressed positive attitudes—particularly those who had previous exposure to hospital-based services—many others exhibited uncertainty, fear, and mistrust. Concerns about potential bad news, financial implications, and the perceived futility of screening asymptomatic infants discouraged participation. Cultural expectations and gender norms further influenced decision-making processes, with fathers often assuming final authority over healthcare expenditures and mothers occupying a subordinate role in health decisions. This patriarchal dynamic limited maternal agency and contributed to low uptake of screening services. Conversely, healthcare stakeholders viewed NNHS as a valuable initiative capable of improving child health outcomes. Nonetheless, they identified multiple systemic constraints, including inadequate governmental funding, insufficient infrastructure, lack of intersectoral collaboration, and the absence of a national screening policy. Consequently, while professional willingness exists, these institutional deficits severely restrict implementation.

The discussion also considers how cultural and religious frameworks shape perceptions of screening and disability. For some parents, screening was seen as interference with divine will, while others regarded a child's impairment as a test of faith. These perspectives illustrate the tension between biomedical rationality and religious determinism. The chapter interprets these findings through a sociocultural lens, recognising that healthcare choices are embedded within systems of belief that define illness, morality, and destiny. The study argues that attempts to expand NS programmes must engage religious and traditional leaders to enhance cultural legitimacy and public acceptance.

Economic and institutional barriers form another crucial dimension of the discussion. Many parents cited cost, transportation challenges, and lack of nearby facilities as key deterrents to screening. Services were largely concentrated in tertiary hospitals, leaving primary healthcare centres and rural populations without access. Stakeholders also lamented the absence of governmental commitment to newborn hearing programmes, pointing out that existing efforts are sporadic and donor-driven. Without a coherent national policy or financial support

mechanism, these initiatives remain unsustainable. Integrating hearing screening into existing maternal and child health programmes such as antenatal care or immunisation services was suggested as a pragmatic strategy to extend coverage and reduce operational costs.

Building on these insights, the discussion emphasises the need for public education campaigns to dispel myths and stigma surrounding HL. Health promotion strategies should include community outreach, mass media education, and the involvement of trained healthcare workers in advocacy. The development of professional training programmes and the inclusion of audiological services within basic healthcare delivery were also recommended to strengthen system capacity. Ultimately, the chapter argues that sustainable progress depends on aligning cultural understanding with institutional reform, ensuring that awareness, accessibility, and affordability are pursued simultaneously.

From a theoretical standpoint, the chapter applies an interpretivist and sociocultural framework to explain how people's meanings and lived experiences inform their health-related behaviours. Health-seeking behaviour, in this context, is not simply an individual choice but a reflection of broader cultural systems, structural inequities, and institutional realities. By interpreting participants' narratives through this lens, the research deepens understanding of the interplay between social belief systems and healthcare utilisation. The interpretivist orientation enabled the study to move beyond surface-level explanations, highlighting how perceptions and experiences mediate engagement with screening services.

CHAPTER 6

Conclusion and Recommendations

6.1 Introduction

This concluding chapter consolidates the key findings of the study and outlines practical, theoretical, and policy implications derived from the analysis of parental and HCP perspectives on NNHS in Port Harcourt, Nigeria. The chapter serves three primary functions: to synthesise and critically interpret the research outcomes; to present evidence-based recommendations for health system strengthening, education, and policy reform; and to delineate the study's contribution to the existing body of knowledge on EHDI within LMICs.

The study set out to explore the attitudes and perceptions of parents and healthcare stakeholders towards NHS, with the broader aim of identifying barriers and facilitators to the adoption and institutionalisation of screening programmes in Nigeria. Drawing on qualitative data from both groups, it sought to understand how cultural, structural, and informational factors interact to shape behaviours and policy gaps surrounding newborn hearing care. Through an interpretivist lens, the study examined participants' lived experiences and situated their narratives within broader health system realities, policy deficiencies, and socio-cultural contexts.

The findings illuminated the complex interplay of personal beliefs, systemic barriers, and professional practice constraints that underpin the limited uptake of NHS in Nigeria. They further revealed that while awareness of HL as a condition exists, there is a limited understanding of its congenital dimension and the role of early detection in mitigating developmental consequences. HCPs, though generally supportive of NHS, expressed concerns about feasibility, infrastructure, and policy backing. These perspectives collectively expose the multifaceted nature of the challenge, one rooted not only in awareness and attitudes but also in governance, access, and trust in the healthcare system.

This chapter therefore synthesises these insights into a coherent discussion that reaffirms the study's significance and applicability to policy and practice. It concludes by proposing targeted, evidence-informed recommendations to strengthen hearing health policy, professional capacity, and community engagement in Nigeria.

6.2 Summary of Findings and Key Insights

The findings of this study demonstrate that attitudes and perceptions towards NNHS are influenced by multiple intersecting determinants, individual, sociocultural, institutional, and systemic. These determinants collectively explain the persistent gap between policy aspirations for universal child health and the actual implementation of hearing screening services in Nigeria.

At the **individual level**, parents' understanding of HL emerged as fragmented and heavily influenced by social belief systems. Many participants conceptualised HL through visible disability or communication difficulty rather than as an invisible sensory deficit detectable at birth. This limited awareness aligns with existing research suggesting that in LMIC contexts, HL is often recognised only after communication delays become evident (Olusanya and Newton, 2018; Agyemang *et al.*, 2019). Parents' awareness was also mediated by cultural and religious beliefs that frequently interpret HL as a divine or spiritual event, rather than a biomedical condition amenable to early intervention. Such perceptions often result in delayed or alternative health-seeking behaviours, including reliance on traditional healers or faith-based remedies, consistent with observations by Mulwafu *et al.* (2022) in East Africa and Swanepoel and Clark (2019) globally.

However, despite these cultural barriers, many parents expressed an openness to NHS when given appropriate information. This finding refutes the assumption that cultural fatalism is a primary deterrent and instead positions the deficit as one of health literacy and trust in the healthcare system. It supports the argument advanced by Gilson (2018) and Nutbeam (2008) that trust and comprehension are central mediators of health behaviour, particularly where institutional credibility is fragile.

At the **professional level**, HCPs displayed a high degree of conceptual understanding about the clinical rationale for NHS but reported practical challenges to implementation. Chief among these were inadequate infrastructure, lack of screening equipment, poor institutional support, and an absence of formal training in EHDI. This finding corroborates earlier Nigerian studies (Adeniyi *et al.*, 2021; Olusanya *et al.*, 2021) that identify systemic neglect of audiological services and workforce deficits as major bottlenecks. Professionals also noted gaps in referral and follow-up pathways, suggesting a fragmented continuum of care. The absence of standardised protocols and monitoring frameworks further weakens accountability and continuity of intervention.

Across both groups, **systemic and structural barriers** were identified as the most profound impediments to progress. These include the lack of a national hearing health policy, limited

resource allocation, and insufficient political prioritisation of sensory disabilities. As White (2020) and Halliday *et al.* (2020) note, EHDI programmes require institutionalisation within broader child health and public health frameworks to achieve sustainability. In Nigeria, as in many LMICs, hearing health remains peripheral to maternal and neonatal agendas, which prioritise high-mortality conditions such as malaria, sepsis, and malnutrition. The consequence is that HL, though low in mortality, remains high in morbidity, leading to lifelong educational, social, and psychological disadvantage.

An additional insight from the study concerns **trust and perceived quality of care**. Both parents and professionals articulated concerns about the reliability and safety of healthcare services, citing medical errors, negligence, and inconsistent diagnostic standards. This erosion of confidence mirrors findings from broader Nigerian health system analyses (Adebayo *et al.*, 2020; Abiola *et al.*, 2021), which highlight that distrust undermines the uptake of preventive services. In the context of NHS, this distrust translates into hesitancy towards screening even among otherwise informed parents. Restoring trust thus emerges as both an ethical and operational priority.

Despite these challenges, the study identified several **facilitating factors** that could enhance NHS adoption if leveraged effectively. These include parental willingness to act when adequately informed, healthcare workers' moral commitment to child welfare, and increasing awareness of disability rights through advocacy and global policy alignment. The momentum created by the *WHO's World Report on Hearing* (WHO, 2021) and the *World Hearing Forum* presents an opportunity for Nigeria to localise international frameworks within its own health system. Moreover, technological innovations such as portable OAE devices and tele-audiology platforms offer low-cost entry points for expanding access, particularly in resource-limited settings (Sharma *et al.*, 2020).

The study therefore concludes that the primary challenge to NHS uptake in Nigeria is not cultural resistance per se, but rather the intersection of **information asymmetry, institutional fragility, and resource inequity**. Parents' attitudes are largely shaped by the extent to which health systems engage them with credible, accessible, and compassionate care. Similarly, HCPs' motivation is constrained by systemic limitations rather than personal unwillingness. The triangulation of these perspectives highlights the need for a multisectoral, policy-driven approach to embed NHS into Nigeria's primary healthcare fabric — supported by investment in training, infrastructure, and community education.

Ultimately, the study reinforces the argument that NNHS must be understood as an ethical imperative within public health — one that ensures early childhood equity and inclusion. By

identifying both the barriers and the enabling conditions, this research provides a nuanced evidence base for designing interventions that are culturally congruent, technically feasible, and socially sustainable.

6.3 Contributions to Knowledge

This study contributes to the growing body of research on NNHS and EHDI within low- and middle-income contexts by providing an empirically grounded, culturally specific understanding of parental and healthcare stakeholder perceptions in Nigeria. While previous studies have predominantly examined the technical or epidemiological dimensions of hearing screening, this research uniquely foregrounds the *socio-psychological, systemic, and ethical* dimensions that determine its acceptance and feasibility in the Nigerian setting.

Theoretically, the study extends the application of the HBM and SEM to auditory health, demonstrating how individual health behaviour is shaped not solely by perceived susceptibility or benefits but by interdependent layers of structural and cultural influence. Parents' decisions regarding NHS were mediated by social networks, spiritual belief systems, and trust in health institutions, factors that transcend the conventional parameters of health behaviour theory. This aligns with Bronfenbrenner's (1994) conceptualisation of health as nested within social environments and supports the call by Glanz *et al.* (2015) to contextualise behavioural models within lived realities.

Empirically, the study enriches knowledge on how cultural logics and systemic fragility interact to constrain the diffusion of health innovations in SSA. By triangulating parental and professional perspectives, the research uncovers a mutual dependency: parents require professional assurance to act, while professionals require systemic and policy support to deliver. This dynamic underscores the importance of institutional trust, echoing Gilson's (2018) framework that positions trust as a central currency in health system performance. The study thereby situates hearing screening not only as a biomedical intervention but as a relational process embedded in governance and communication.

Methodologically, this study advances qualitative inquiry in African audiological research by adopting a multi-stakeholder design that captures both demand- and supply-side determinants. This approach departs from the dominant epidemiological models that often quantify prevalence without interrogating the social contexts of health-seeking behaviour. The richness of the data thus lies in its illumination of how power, belief, and policy intersect to shape maternal and child health trajectories in Nigeria.

Finally, the study contributes to global scholarship by articulating a framework for *contextual adaptation of EHDI* in LMICs, emphasising culturally congruent engagement, policy integration, and human resource strengthening as cornerstones of sustainability. These contributions resonate with the WHO's (2021) advocacy for hearing care as part of UHC and reinforce the SDG 3.8 mandate for equitable access to quality health services.

6.4 Implications and Recommendations for Policy and Practice

The findings underscore that advancing NNHS in Nigeria requires a coordinated, multi-tiered approach that simultaneously addresses policy, infrastructure, professional capacity, and community engagement. Effective implementation depends not only on technology or training but also on fostering trust, addressing stigma, and embedding hearing care within broader maternal and child health systems. The recommendations shown in Table 12 and described below are therefore proposed as an evidence-based roadmap for policy and practice reform.

Table 12: Proposed recommendations

1	National Policy Integration and Institutionalisation of EHDI
2	Strengthening Health System Infrastructure and Workforce Capacity
3	Health Education, Community Engagement, and Behavioural Change Communication
4	Integration of Technology and Data Systems for M&E
5	Disability Inclusion, Rehabilitation, and Intersectoral Collaboration

Source: Author

6.4.1 National Policy Integration and Institutionalisation of EHDI

A primary recommendation is the formal integration of EHDI into Nigeria's national child health and primary healthcare policies. Currently, the absence of a clear policy framework has left NNHS to sporadic, donor-funded projects or tertiary hospital initiatives. Embedding EHDI within the **National Strategic Health Development Plan (NSHDP III)** and aligning it with the **National Ear Care Policy** would ensure institutional commitment and budgetary allocation.

International evidence indicates that sustained NHS implementation requires national-level endorsement and legal frameworks (Kamenov and Chadha, 2020; WHO, 2021). Countries such as South Africa and Brazil achieved significant coverage only after embedding screening mandates within public health policy (Swanepoel and Clark, 2019). For Nigeria, policy integration should define service delivery standards, referral pathways, and inter-ministerial coordination between the Ministries of Health, Education, and Women Affairs. A national registry of hearing screening outcomes would support monitoring, benchmarking, and accountability.

Institutionalisation would also provide the foundation for scaling NHS beyond tertiary hospitals to primary healthcare centres (PHCs). Integrating hearing screening into routine postnatal care, alongside immunisation and neonatal checks, would facilitate universal reach while normalising hearing assessment as part of standard neonatal wellbeing. Such integration aligns with the WHO's (2021) "Hearing for Life" framework, which advocates mainstreaming hearing health into existing systems rather than establishing parallel programmes.

6.4.2 Strengthening Health System Infrastructure and Workforce Capacity

A robust policy framework must be matched by practical capacity within the health system. The findings reveal that the limited availability of diagnostic equipment, audiological expertise, and follow-up services significantly constrains EHDI implementation. Thus, investment in infrastructure and human resource development is essential.

This can be achieved through three strategic actions:

1. **Provision of screening equipment** such as portable OAE and AABR devices in all secondary and tertiary hospitals. Procurement should be decentralised and supported through public-private partnerships to reduce delays.
2. **Development of specialised training programmes** in paediatric audiology and NNHS, integrated into nursing and medical curricula. Short-term professional courses, supported by national accreditation, could rapidly build a skilled workforce capable of conducting screening and follow-up assessments (Olusanya *et al.*, 2021).
3. **Establishment of multidisciplinary EHDI teams** at regional hospitals, comprising audiologists, otolaryngologists, speech-language pathologists, and community health officers, to ensure continuum of care and referral linkage.

The expansion of tele-audiology services should also be prioritised to extend diagnostic support to rural and under-resourced regions (Sharma *et al.*, 2020). This digital approach would mitigate geographical inequities and foster collaborative diagnosis and mentoring among professionals.

6.4.3 Health Education, Community Engagement, and Behavioural Change Communication

The study highlights that parental decisions are strongly influenced by awareness and social norms. Therefore, comprehensive health education and community engagement programmes are necessary to enhance understanding of HL and the importance of early screening.

A **national communication strategy** should be developed to disseminate culturally appropriate messages through community HCPs, religious leaders, and local media. These communication efforts should explicitly address myths, fatalistic beliefs, and stigma associated with HI, issues identified not only in this study but across SSA (Agyemang *et al.*, 2019; Mulwafu *et al.*, 2022).

Behavioural change communication (BCC) strategies rooted in social marketing principles can transform attitudes towards screening. By framing NHS as a routine aspect of responsible parenthood rather than as a diagnostic test for disability, messaging can reposition the practice as protective and aspirational. Leveraging existing maternal health platforms such as antenatal clinics and immunisation campaigns provides opportunities for consistent reinforcement.

Engaging parents as advocates and peer educators can further build trust and social diffusion, as peer-led education has proven effective in changing maternal health behaviours (Ogunjimi *et al.*, 2020). Incorporating testimonies from parents of children who benefitted from early detection could humanise the intervention and counter prevailing misconceptions.

6.4.4 Integration of Technology and Data Systems for M&E

To ensure efficiency, accountability, and scalability, NHS programmes must be supported by robust data management and digital health systems. The absence of reliable data on the incidence of congenital HL in Nigeria constrains planning and advocacy. Implementing **electronic health information systems (HIS)** and **screening registries** at state and national levels would enable real-time monitoring of coverage, follow-up rates, and outcomes.

Adopting low-cost mobile data collection platforms can facilitate field-level data entry by screening personnel, while centralised dashboards could provide policymakers with visual analytics for decision-making. The integration of EHDI data into the DHIS2, already used in Nigeria for maternal and child health indicators, would streamline reporting and minimise duplication (Chadha *et al.*, 2021).

Furthermore, leveraging **artificial intelligence (AI)** tools for hearing assessment and tele-mentoring could revolutionise screening efficiency, particularly in low-resource contexts (Mehta *et al.*, 2022). However, such technological integration must be accompanied by data governance frameworks to ensure privacy, interoperability, and ethical compliance.

6.4.5 Disability Inclusion, Rehabilitation, and Intersectoral Collaboration

The study underscores that screening is only the first step in a continuum that includes diagnosis, intervention, rehabilitation, and inclusion. A major gap in Nigeria's health system is the weak linkage between detection and long-term support for children with HI. To close this gap, policy must integrate EHDI into broader disability and educational frameworks.

This requires intersectoral collaboration among health, education, and social welfare ministries to ensure that early-detected children receive assistive technologies, inclusive education, and family counselling. Internationally, such models have been effective in reducing lifelong disability burden (Swanepoel *et al.*, 2020). The *National Commission for Persons with Disabilities* should partner with state health authorities to mainstream HI within national disability inclusion agendas.

Additionally, psychosocial support for parents and caregivers must be institutionalised, acknowledging the emotional strain of diagnosis and the need for resilience-building. Linking families to parent support networks, community-based rehabilitation (CBR) programmes, and early intervention centres would enhance coping capacity and continuity of care.

Disability inclusion also entails advocacy for equity and human rights. Embedding EHDI within Nigeria's commitments to the UN Convention on the Rights of Persons with Disabilities (CRPD) ensures alignment with global obligations for accessibility and non-discrimination (United Nations, 2006). By framing hearing screening as both a public health and a human rights issue, policymakers can elevate its priority within the national agenda

6.5 Study Limitations

Like all qualitative research, this study is situated within a specific social, temporal, and cultural context, which shapes both the scope and the interpretation of its findings. The first limitation arises from its geographical and demographic focus on Port Harcourt, Nigeria. Although the findings offer deep insight into attitudes and perceptions within this setting, they cannot be generalised to all Nigerian regions or to SSA as a whole. Socioeconomic and cultural heterogeneity across Nigeria, encompassing urban–rural disparities, differences in healthcare access, and variations in educational attainment, may yield divergent experiences of hearing screening.

Secondly, the qualitative design of the study prioritised depth of understanding over statistical generalisability. While this methodological choice was appropriate for exploring complex perceptions and cultural nuances, it necessarily limits the ability to quantify the prevalence of

specific attitudes or the relative weight of influencing factors. Complementary quantitative studies would therefore be valuable to expand and validate these findings on a larger scale (Creswell and Plano Clark, 2018).

Another limitation concerns the potential for social desirability bias among participants, particularly HCPs, who may have presented more socially acceptable views regarding clinical competence or policy awareness. While confidentiality was assured, professional self-presentation may have shaped some responses. Similarly, parents may have moderated their opinions to align with perceived expectations about health-seeking behaviour or religious belief. The reflexive awareness of this dynamic was mitigated through iterative questioning and triangulation, but it remains a methodological constraint.

The dearth of publicly available information is a major obstacle to comprehending the care routes for infant HL in Nigeria. Even though the need of early detection and intervention for HIs is becoming more widely acknowledged, there is still a noticeable dearth of up-to-date and thorough data on Nigerian government websites and other public venues.

While some government websites are technically functional, it became clear during the search for pertinent information that their content is frequently disorganised, out-of-date, and insufficient for obtaining meaningful insights into NNHS protocols, care pathways, and intervention strategies. These websites were difficult to navigate, and important information was either missing or hidden in irrelevant sections. In addition to impeding openness, this disarray puts stakeholders, medical professionals, and academics at a disadvantage since they depend on these platforms for statistical data, program implementation techniques, and policy recommendations.

Furthermore, the issue is made worse by the lack of frequently updated resources. When information is accessible, it is frequently unclear and inconsistent, making it difficult to provide a cogent summary of current policies, implementation status, or areas in need of assistance. This disparity in information that is readily available to the public raises the possibility that higher administrative levels may not have given newborn hearing care programmes enough priority in addition to inefficient knowledge transmission.

All the healthcare stakeholders recruited in the study were recruited from a singular government-owned hospital. Although some participants owned or managed private healthcare institutions, the emphasis mostly centred on viewpoints formed within the framework of public healthcare service delivery. This constrained scope may have unintentionally limited the variety of ideas and experiences gathered, as private hospitals

typically own distinct operational frameworks, resources, and methodologies for healthcare service delivery. Future study would greatly benefit from expanding recruiting to encompass other healthcare facilities, both public and private. Broadening the sample to include a diverse array of institutions across various locations and ownership categories would yield a more nuanced and thorough comprehension of the dynamics related to newborn hearing care pathways. Private hospitals may provide insightful perspectives on resource allocation, service delivery models, patient engagement, and administrative problems, which may significantly differ from those in public healthcare systems. Moreover, engaging a broader and more diverse array of HCPs from various facilities could reveal contextual elements, intricate issues, and creative methods that the current study may have overlooked due to its restricted institutional focus. These supplementary insights would augment the generalisability and applicability of the findings while fostering a more comprehensive understanding of the healthcare environment for NNHS and intervention in Nigeria.

This research was carried out in Port Harcourt, a significant metropolis in Nigeria's South-South area. The findings offer significant insights into perceptions and attitudes regarding access to NNHS services in this region; however, it is crucial to acknowledge that Nigeria is an ethnically, culturally, and geographically diverse nation, comprising six geopolitical zones: South-South, South-West, North-Central, South-East, NorthWest, and North-East. Each location has unique socio-cultural norms, healthcare delivery systems, awareness levels, and resource availability, all of which can profoundly affect healthcare-seeking behaviour and attitudes regarding NNHS. Future study should seek to enhance the understanding of the factors affecting NNHS uptake by extending this work to the other five geopolitical regions of Nigeria. This technique would enable researchers to discern regional discrepancies, distinct cultural obstacles, and localised facilitators that may influence the implementation and acceptance of NNHS programmes.

The South-West region, characterised by superior healthcare infrastructure and public health awareness, may exhibit distinct challenges and opportunities in contrast to the North-East, where healthcare access and literacy are hindered by systemic issues and security concerns. Researching various places would reveal particular socio-cultural and traditional views that may affect parental perspectives on early HL identification and intervention. Elements such as religious convictions, communal health practices, gender roles, and economic inequalities may serve as critical influencers of healthcare decisions across various areas. This degree of specificity would allow health policymakers to customise guidelines, awareness initiatives, and resource distribution techniques to effectively tackle region-specific concerns.

Moreover, geographical disparities in healthcare accessibility and infrastructure may illuminate logistical and operational obstacles specific to each region. Remote and underserved villages in North-West Nigeria may experience travel and communication difficulties, whilst urban centres in the South-East may confront constraints associated with healthcare service saturation or affordability.

Despite these limitations, the study remains a valuable and original contribution, given the paucity of qualitative inquiry into the sociocultural and systemic determinants of NNHS in Nigeria and the broader African region.

6.6 Study Strengths

Notwithstanding these limitations, this research possesses several notable strengths that enhance its academic credibility, practical relevance, and contribution to policy discourse.

Foremost among these is its methodological depth and triangulation. By incorporating the perspectives of both parents and HCPs, the study captured a holistic understanding of the demand- and supply-side dynamics shaping NNHS. This dual-perspective approach advances prior research that often examines either public awareness or professional readiness in isolation.

Another key strength lies in its contextual sensitivity. Conducted within Port Harcourt, a major urban centre characterised by both advanced medical infrastructure and persistent social inequities, the study illuminates the tension between modern health services and enduring traditional belief systems. The findings thus provide nuanced insight into how cultural frameworks coexist with biomedical paradigms, highlighting the importance of contextualised health interventions.

Additionally, the study is distinguished by its theoretical integration of health behaviour and social systems frameworks. Drawing on the HBM (Rosenstock *et al.*, 1988) and the SEM (Bronfenbrenner, 1994), it successfully links individual beliefs to structural determinants such as institutional trust, resource distribution, and policy orientation. This conceptual integration enhances the explanatory power of the findings and contributes to theory-building within global hearing health research.

The study also offers policy relevance and translational potential. By connecting empirical insights with actionable recommendations for policymakers, educators, and practitioners, it transcends academic description to propose realistic strategies for reform. Its recommendations align with global health priorities, including the WHO's (2021) *World Report*

on *Hearing*, the UHC framework, and the *SDGs*, particularly SDG 3 (Good Health and Wellbeing) and SDG 10 (Reduced Inequalities).

Finally, this research's ethical and participatory rigour enhances its validity. The use of semi-structured interviews facilitated reflexive engagement, allowing participants to articulate personal experiences with authenticity. Ethical clearance, informed consent, and cultural sensitivity were maintained throughout, ensuring that participants' voices were respected and represented faithfully.

6.7 Recommendations for Future Research

The insights from this study open several important avenues for future inquiry, both within Nigeria and across comparable LMIC contexts.

First, future research should adopt mixed-methods designs that integrate qualitative depth with quantitative breadth. Combining ethnographic insight with population-based surveys would allow scholars to map the prevalence of specific attitudes and identify demographic or socioeconomic predictors of screening uptake. Such triangulation would provide a more comprehensive evidence base for policy formulation (Creswell and Plano Clark, 2018).

Second, there is a need for longitudinal and intervention-based research to evaluate changes in parental attitudes following exposure to targeted health education or public awareness campaigns. Long-term evaluation of behavioural change will clarify whether improved knowledge translates into screening uptake and adherence to follow-up care.

Third, future investigations should examine the economic and policy dimensions of NHS in Nigeria, including cost-effectiveness analyses, budget impact assessments, and financing mechanisms. Comparative studies from South Africa (Swanepoel and Clark, 2019) and India (Mehta *et al.*, 2022) demonstrate that economic modelling can effectively guide national decision-making on resource allocation.

Fourth, the expansion of implementation research is essential to identify scalable models of EHDI integration into Nigeria's primary healthcare system. Pilot projects assessing different delivery models, such as hospital-based, community-based, or mobile screening units, can inform context-appropriate scale-up strategies.

Fifth, there is a critical need for research on training and competency development among HCPs. Future studies could assess curriculum adequacy, CPD uptake, and interprofessional collaboration in paediatric audiology.

Finally, scholars should engage in comparative cross-cultural research to explore how religious and traditional belief systems across Africa mediate attitudes to disability and preventive care. Such research would deepen theoretical understanding of health behaviour diversity and support culturally congruent policy design.

6.8 Reflection

My path into this study arose from a deep and personal love for supporting the deaf population, which originated in my long-standing friendship with someone who has HL. Through this association, I personally learnt about the difficulties, social exclusions, and obstacles that people with HL sometimes encounter, especially with regard to access to healthcare, education, and chances for both personal and professional development. These encounters sowed a seed in me, a will to change things and significantly help the deaf community members live better lives.

In my own state, I saw that the deaf population is routinely excluded, particularly in relation to issues of policy decisions and healthcare access. For those with hearing problems, basic healthcare services that others might take for granted often remain out of reach, because of communication obstacles, lack of interpreters in healthcare environments, and inadequate awareness campaigns catered to their requirements. I started acting because of this obvious disparity in healthcare inclusiveness and accessibility. Inspired by this cause, I volunteered to start an NGO with an eye towards empowering the deaf population with interpretive services and skill development programmes. The NGO aimed not just to provide people with useful skills that can promote independence and economic empowerment but also to close the communication gap in important sectors such public service delivery and healthcare.

Through the NGO, we developed alliances with the Ministry of Health, Rivers State chapter, and other companies with same objectives. We coordinated sensitising campaigns targeted at increasing knowledge of health-related concerns including preventative care, early intervention for hearing problems, and easily available healthcare facilities. Sign language interpreters were given to guarantee that members of the deaf community may actively engage, ask questions, and fully profit from the sessions throughout these events. These gatherings evolved from educational chances to venues for fostering a feeling of community, inclusivity, and common goal.

Motivated by my commitment to this cause and my developing awareness of the systematic obstacles influencing those with HL, I decided to work on a master's degree in public health. I wanted to be ready with tools, information, and abilities required to have a more general,

evidence-based influence in this field. Naturally driven by this passion, my master's dissertation concentrated on NS for HL, a field still much lacking in Nigeria. By means of this study, I want to investigate the obstacles to early identification and intervention, spot systematic policy and implementation gaps, and provide doable solutions for enhancing NNHS availability.

The knowledge of this study's potential to be a vital evidence base for healthcare stakeholders, legislators, and pertinent authorities in developing focused policies and interventions meant to increase access to NNHS services in Port Harcourt, Nigeria, drove one of the most important reasons behind doing this study. The results of this study are positioned to provide insightful analysis and pragmatic suggestions that could directly affect policy development, resource allocation, and the creation of standardised care paths for NNHS programmes given the critical role early detection and intervention play in reducing the long-term impacts of HL.

Personally, my study has been firmly anchored in my own experiences and love of lobbying in the healthcare field. Having seen the reality experienced by people with hearing disabilities together with the systematic disparities in healthcare access, I have always felt a great need to urge early identification and treatments for HL. This study not only helps to close important information gaps in the area but also gives me the credibility and evidence-based insights I need to support sensible health seeking practices among important players in communities and among other stakeholders. I am now more suited to advocate awareness, persuade decisionmakers, and spearhead projects ensuring NNHS becomes a standard component of Nigerian regular healthcare operations.

Though starting this academic path with considerable enthusiasm, passion, and a clear view of the expected results, the research process was not without difficulties. I came across unanticipated challenges and times of doubt along the road, which greatly slowed down the rate of advancement. These encompassed logistical difficulties, barriers to accessing accurate data sources, negotiating bureaucratic obstacles, and delays in acquiring required permits and approvals. Furthermore, controlling the intricate interaction of social, cultural, and institutional elements affecting access to healthcare in the area needed careful navigation and flexibility.

Still, these difficulties turned into chances for development, resilience, and more introspection, so strengthening the whole study process. They underlined the difficult reality of doing healthcare research in environments with limited resources and the need of tenacity, adaptability, and creative problem-solving in conquering challenges.

One of the most difficult and shaping events of my Ph.D. journey came when my laptop vanished from a public library. Along with being upsetting personally, this occurrence seriously affected my academic development, since I lost a lot of vital records and research tools. The theft happened in my third year of study, a pivotal period when I had already gathered many notes, drafts, and tools required to effectively finish my project. That crisis made the awareness of the fragility of depending just on one storage device quite evident. The immediate aftermath was difficult, since I had to painstakingly rebuild months of effort from memory and fragmented backups.

This delay seriously affected my study schedule and increased pressure to fulfil submission deadlines and get ready for planned supervision visits. Having to go back over my lost work under tight time limits made the rewriting and reorganising process both physically and psychologically taxing. Though this journey was frustrating and taxing, I discovered that it also resulted in unanticipated good results. Re-writing a lot of my work made me go back over my ideas and hone my arguments, therefore producing a more complete and critically examined final product. The encounter sharpened my critical thinking and problem-solving abilities as well as gave my academic approach more tenacity and resolve. Unquestionably a terrible and disturbing occurrence, it also presented a chance for development and self-awareness.

That episode taught me a great lesson on the need of protecting intellectual output. Since then, I have grown used to save my papers on several devices and platforms, including external hard drives, cloud storage, and backup systems. This proactive strategy guarantees that I am now more ready to meet unanticipated security or technological difficulties without compromising the integrity of my work. Looking back, even if the theft of my laptop was a terrible and very annoying event, it also acted as a spur for improved academic behaviour and general attitude to document management and data security. Now, this event is seen as a significant turning point that not only impacted my academic field but also helped me to equip myself to negotiate such obstacles with more future confidence and efficiency.

One major health issue I faced during my Ph.D. path seriously hampered my advancement and output. I started having constant, incapacitating neck pain, which was finally linked to extended use of my laptop and computer for school. After a comprehensive medical assessment, my doctors highly encouraged me to limit or totally cease using electronic gadgets for prolonged durations, since they were found as a contributing factor to my condition. Although this guidance is vital for my recovery, it seriously hampered my ability to keep my normal pace of study and writing.

Doctorate research is by nature long hours of reading, data analysis, and writing, activities mostly dependent on computer use. Following the medical advice meant I had to reorganise my workflow, use other approaches, and apply more ergonomic methods to manage my condition while still advancing on my study. This change was sometimes annoying, since it caused delays, disruptions, and a general sense of being behind schedule. However, it also underlined the need for resilience, patience, and self-care in conquering unanticipated difficulties.

Notwithstanding these medical challenges, I stayed dedicated to my study objectives and discovered means to negotiate the restrictions placed. To avoid extra stress, I made sure I followed medical advice, set shorter but more concentrated work sessions, and employed voice-to-text software. This experience challenged my endurance and will, but it also gave me a chance to practise flexibility, put my health first, and learn a better balance between school obligations and personal wellness.

I want to use this opportunity to sincerely say thank you to every participant who helped with this research. I really value your openness, honesty, and want to help with this research to the parents and HCPs who voluntarily contributed their experiences, ideas, and points of view. Your involvement gave the results value, depth, and richness as well as the necessary basis around which this study was constructed. Your comments will not only help to clarify NNHS in Nigeria but also provide an essential basis for policy recommendations and doable actions. I truly appreciate the time, work, and trust you have given this study; your efforts have permanently changed this research.

6.9 Concluding Remarks

This study offers a significant and original contribution to understanding the barriers and facilitators to NNHS in Port Harcourt, Nigeria, with a focus on cultural norms, gender dynamics, financial barriers, and the nuanced cultural sensitivity required for effective healthcare interventions. While previous research in Nigeria has primarily concentrated on the Yoruba and Hausa communities, this study addresses a significant gap by focusing specifically on the Igbo community in Port Harcourt. Through this lens, the study provides a deeper understanding of the socio-cultural, institutional, and economic factors shaping access to NNHS in the region.

One of the study's most important contributions is its examination of Igbo cultural norms and their influence on healthcare-seeking behaviour regarding NNHS. Within the Igbo community, HL is often interpreted through a spiritual or supernatural lens, with many viewing it as divine

punishment, witchcraft, or ancestral curses. These cultural narratives perpetuate fear, stigma, and a sense of hopelessness, discouraging parents from seeking medical intervention. Instead, parents may turn to spiritual healers, religious leaders, or traditional practices in search of solutions, delaying or entirely avoiding medical screenings.

This cultural lens shapes parental perceptions of healthcare and creates a deep-seated resistance to NNHS services, even when they are accessible. The study highlights that addressing these cultural misconceptions requires a nuanced and culturally sensitive approach. Healthcare campaigns must incorporate trusted voices from within the community, such as religious leaders, traditional leaders, and respected community figures, to build trust, dispel myths, and foster acceptance of medical interventions.

Public health campaigns must be tailored to local cultural contexts, emphasising not only the medical benefits of NNHS but also addressing the spiritual fears and misconceptions that deter participation.

The study also sheds light on the gendered dimensions of healthcare-seeking behaviour, revealing the critical role that gender dynamics play in decisions regarding NNHS. In many Igbo households, fathers often assume the role of primary decision-makers in family healthcare matters. However, the study found that while fathers wield significant authority in determining healthcare choices, they are frequently disengaged from awareness campaigns and health education programmes related to NNHS. Mothers, on the other hand, are typically more observant of their children's health and are often the first to recognise signs of potential HL. Despite their awareness, mothers often face systemic and cultural barriers when attempting to act on their observations without the explicit approval of their spouses. This gendered power imbalance creates a gap in healthcare decision-making, where informed mothers are unable to act independently, and less-informed fathers inadvertently become obstacles to timely intervention.

The study highlights the importance of engaging both fathers and mothers in healthcare education initiatives. Awareness campaigns should be designed to resonate with male decision-makers, emphasising their crucial role in supporting early detection and intervention for HL. Simultaneously, women must be empowered with knowledge, confidence, and community support to advocate effectively for their children's health needs.

Financial barriers are another critical obstacle identified in this study. Many families in Port Harcourt face significant economic constraints that limit their ability to access NNHS services. The costs associated with screening procedures, follow-up appointments, treatment, and

ongoing care impose a heavy financial burden, particularly on families from low-income backgrounds. These direct costs are further compounded by indirect costs, including transportation expenses, time away from work, and the loss of income associated with caregiving responsibilities.

The study highlights that financial barriers are not only about the high cost of services, but also the absence of systemic financial support mechanisms, such as government subsidies, insurance coverage, or publicly funded screening programmes. In many healthcare facilities, NNHS services are not integrated into routine maternal and child healthcare programmes, making them an additional expense for families. The study advocates for policy reforms aimed at reducing financial barriers, including subsidies for screening services, integration of hearing screening into routine maternal healthcare, and financial assistance schemes for vulnerable families. Partnerships with NGOs, international health agencies, and local philanthropic groups are also highlighted as potential strategies to address the funding gaps.

Institutional and structural challenges were another key finding of this study. Healthcare infrastructure limitations, inadequate training of HCPs, and the absence of a national NNHS policy framework emerged as significant barriers to service delivery. Many healthcare workers lack the specialised skills required to conduct NNHSs effectively, counsel parents appropriately, and ensure follow-up care. Additionally, healthcare facilities are often under-equipped, with limited access to modern screening tools and diagnostic equipment. The lack of standardised screening protocols across healthcare facilities further exacerbates these challenges, leading to inconsistent practices and unreliable outcomes.

The absence of a cohesive national policy framework for NNHS creates a fragmented healthcare landscape where screening availability and quality vary significantly across regions and facilities. The study underscores the urgent need for policy-level interventions, including mandatory training for healthcare workers, investment in modern equipment, and the development of a standardised national policy framework for NNHS. Such measures are critical for ensuring consistency, accountability, and sustainability in service delivery.

Perhaps one of the most impactful contributions of this study is its emphasis on the nuanced cultural sensitivity required for effective healthcare interventions in Port Harcourt. The study reveals that cultural norms, financial barriers, gender roles, and institutional challenges are deeply interconnected, requiring a multifaceted and context-specific approach. Healthcare campaigns and interventions must move away from generic, one-size-fits-all strategies and instead adopt tailored approaches that respect the local socio-cultural and economic realities of the community.

Effective public health campaigns must be culturally competent, linguistically accessible, and delivered by trusted community figures who can bridge the gap between traditional beliefs and medical knowledge. HCPs must also be trained not only in the technical aspects of hearing screening but also in cultural competence and effective communication to build trust and rapport with parents.

The study also highlights the need for sustained, long-term community engagement rather than one-off healthcare campaigns. Awareness and education initiatives must be ongoing, continuously addressing cultural beliefs, financial constraints, and gendered power dynamics. Additionally, collaborative partnerships between HCPs, policymakers, local authorities, and community leaders are essential for creating an environment where NNHS is not only accessible but also accepted and valued by the community.

This research goes beyond identifying problems to offer actionable recommendations for HCPs, policymakers, and community stakeholders. By focusing on the interplay between cultural norms, gender dynamics, financial barriers, and institutional shortcomings, it provides a holistic understanding of the challenges and opportunities in NNHS in Port Harcourt. Its findings have broader implications, serving as a model for other regions in Nigeria and similar low-resource settings worldwide. Through its in-depth analysis and context-specific insights, the study lays a strong foundation for future research, evidence-based policy development, and sustainable healthcare interventions aimed at improving NNHS outcomes and ensuring every child, regardless of their background, has access to early detection and intervention for HL.

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Appendix 1: Trainings Attended



Chisom Nwankwo

Learning Record

This document contains a record of self-reported completions of activities, downloaded from the Inkpath platform. It may include details of activities such as workshops, seminars, online learning, self-directed learning, and other self-directed activities. It should not be considered to be a formal transcript but rather an output from engagement with continuing personal and professional development activities.

Training Completed

Activity	Provider	Mode of Delivery	Date Completed
GTA Teaching and Learning Session Equality, Diversity and Inclusion at Brunel	Brunel	Activity - Other	2021-02-01
Academic Reading Course	Brunel	Activity - Other	2021-02-03
Careers: CVs and supporting statements for academic positions	Graduate School	Activity - Live (online)	2021-02-03
Critical appraisal of scientific and medical literature	BRUNEL	Activity - Other	2021-02-03
Research Ethics Workshop	Brunel	Activity - Other	2021-02-04
Systematic reviews and meta-analysis	brunel	Activity - Other	2021-02-04
Theory & Practice of Qualitative Research	Brunel	Activity - Other	2021-02-04
Academic Grammar course	Brunel	Activity - Other	2021-02-09
Academic ReadingReading Research Articles	Brunel	Activity - Other	2021-02-10
Effective academic writing	Graduate School	Activity - Live (online)	2021-02-10
Managing your time effectively	Graduate School	Activity - Live (online)	2021-02-22
Introduction to RefWorks	Library	Activity - Live (online)	2021-02-24
A Comparison of Qualitative Methods	Graduate School	Activity - Live (online)	2021-02-25

NVivo: Coding & classifying data	Graduate School	Activity - Live(online)	2021-03-03
Analyzing Qualitative Data	Graduate School	Activity - Live (online)	2021-03-04
Delivering online poster presentations	Graduate School	Activity - Live (online)	2021-03-04
NVivo: Getting evidence	Graduate School	Activity - Live (online)	2021-03-05
PRESENTATION SKILLS: Designing online poster presentations	Graduate School	Activity - Live (online)	2021-03-05
Graduate School induction	Graduate School	Activity - Live (online)	2021-04-15
Media and public engagement skills - Online module (A)	CHMLS	Activity - Self study	2021-05-06
Nine months review: How do I prepare?	Graduate School	Activity - Live (online)	2021-06-15
Research Integrity 2.0 (Good Research Conduct)	Brunel	Activity - Other	2021-06-15
Managing and recording your research	Brunel	Activity - Other	2021-06-21
Research Integrity 2.0 (Planning your research)	Brunel	Activity - Other	2021-06-21
Research Integrity 2.0 (Irresponsible research practices)	Brunel	Activity - Other	2021-06-21
Reflective thinking and writing to enhance your teaching practice	Academic Professional Development Unit	Activity - Live (online)	2021-06-23
Insight into teaching and HE lecturing	Brunel	Activity - Other	2021-06-30
Microsoft Azure Data Fundamentals		Activity - Other	2021-06-30
Nine months review: How do I prepare?	Graduate School	Activity - Live (online)	2021-06-30
Researcher Futures: Career insights into teaching and HE lecturing	Graduate School	Activity - Live (online)	2021-06-30
Thesis writing group	Graduate School	Activity - Live (online)	2021-06-30
Vice-Chancellor's Conference Prize application	Graduate School	Activity - Live (online)	2021-07-05
Nine months review: How do I prepare?	Graduate School	Activity - Live (online)	2021-07-06
Banishing the ghost: Prepare for your first academic Conference	Brunel	Activity - Other	2021-07-09
Thesis writing group	Graduate School	Activity - Live (online)	2021-07-13

Who Cares Now? Gender and Care Professions	Brunel	Activity - Other	2021-07-14
Gender and Care Professions conference	Brunel	Activity - Other	2021-07-15
How To Manage Stress	Graduate School	Activity - Live (online)	2021-07-21
How To Develop your Project Management Skills	Graduate School	Activity - Live (online)	2021-07-28
Research integrity	Graduate School	Activity - Self study	2021-08-02
Writing workshop series: Reflexivity and writing	Graduate School	Activity - Live (online)	2021-08-13
Introduction to RefWorks	Library	Activity - Live (online)	2021-08-25
Nine months review: How do I prepare?	Graduate School	Activity - Live (online)	2021-09-03
HETL Information session	Academic Professional Development Unit	Activity - Live (online)	2021-09-07
Reviewing Manuscripts for Journals - Online module (A)	CHMLS	Activity - Self study	2021-09-09
BAME Early Careers Conference in STEMM & Business		Activity - Other	2021-09-10
British Science Festival	Anglia Ruskin University	Activity - Live (in person)	2021-09-14
Thesis writing group	Graduate School	Activity - Live (online)	2021-09-14
Careers: Networking and job hunting strategies for researchers	Graduate School	Activity - Live (online)	2021-09-15
The Black Doctoral Researchers Collective (BDRC) inaugural meeting	Brunel	Activity - Other	2021-09-17
Researcher Knowledge-To-Action Series (Session 1) Interdisciplinarity: How Creativity can Inform Research	Brunel	Activity - Other	2021-09-21
Writing workshop series: Academic writing - Editing	Graduate School	Activity - Live (online)	2021-09-23
Managing Data - Opening Access Data Sets - Online module (A)	CHMLS	Activity - Self study	2021-09-26
Principles of Research Methods Online Course and Self Assessment Exercise	Graduate School	Activity - Self study	2021-09-26
University teaching: Core skills online programme	Academic Professional Development Unit	Activity - Self study	2021-09-26

Brilliant Club Teaching Placement Information	Brilliant Club	Activity - Live(online)	2021-09-28
Doctoral research: Getting started	Graduate School	Activity - Live (online)	2021-09-28
Thesis writing group	Graduate School	Activity - Live (online)	2021-09-28
YERUN Research Mobility Award Application	Graduate School	Activity - Live (online)	2021-09-28
Researcher Futures: Career insights into research outside academia	Graduate School	Activity - Live (online)	2021-10-13
Creating a coherent learning journey and encouraging students to become independent learners	Academic Professional Development Unit	Activity - Live (online)	2021-10-15
Careers: Preparing for job interviews and interview tasks	Graduate School	Activity - Live (online)	2021-10-18
Embedding the EDI toolkit in your teaching practice	Academic Professional Development Unit	Activity - Live (online)	2021-10-18
Managing Your Data and Digital Information	Graduate School	Activity - Live (online)	2021-10-26
COP26 - FPH Members' briefing	Faculty of Public Health	Activity - Other	2021-10-27
Transforming Public Health; LEARNING FROM THE PAST, PREPARING FOR THE FUTURE	Institute for public Health	Activity - Other	2021-10-27
An introduction to ethics and ethics processes	CHMLS	Activity - Live (online)	2021-11-03
Theory and Practice of Qualitative Research	CHMLS	Activity - Live (online)	2021-11-03
Introduction to research ethics	Graduate School	Activity - Live (online)	2021-11-04
NVivo: Browsing your data	Graduate School	Activity - Live (online)	2021-11-21
NVivo: Coding & classifying data	Graduate School	Activity - Live (online)	2021-11-21
NVivo: Finding more information from your data	Graduate School	Activity - Live (online)	2021-11-21
NVivo: Getting evidence	Graduate School	Activity - Live (online)	2021-11-21
NVivo: Literature review	Graduate School	Activity - Live (online)	2021-11-21

NVivo: Managing data	Graduate School	Activity - Live(online)	2021-11-21
NVivo: Managing your research project	Graduate School	Activity - Live (online)	2021-11-21
NVivo: Transcription	Graduate School	Activity - Live (online)	2021-11-21
NVivo: Working with social media	Graduate School	Activity - Live (online)	2021-11-21
SPSS: Understanding and using correlations	Graduate School	Activity - Live (online)	2021-11-21
Introduction to Equality, Diversity and Inclusion	Graduate School	Activity - Live (online)	2022-03-17
Introduction to RefWorks	Library	Activity - Live (online)	2022-03-17
Introduction to research ethics	Graduate School	Activity - Live (online)	2022-03-17
How To Manage Stress	Graduate School	Activity - Live (online)	2022-03-19
Mastering Qualitative Analysis	Brunel	Activity - Other	2022-04-29
NVivo course for qualitative data analysis	Graduate School	Course	2022-05-06
Introduction to RefWorks	Library	Activity - Live (online)	2022-05-25
Publishing in academic journals: how to properly structure your journal paper and get it accepted	Graduate School	Activity - Live (online)	2022-07-15

Appendix 2: Initial contact with the gatekeeper



The Chief Nursing Officer
University of Port Harcourt Teaching Hospital
Choba, Port Harcourt.
Rivers State.

28th February 2022

Dear Mrs Etukudo

Re: Research entitled: “Exploring the attitudes and perceptions of parents and healthcare stakeholders to access to newborn screening for hearing loss in Port Harcourt, Nigeria.”
Conducted by **Chisom Jolly Nwankwo, a PhD student at the College of Health, Medicine and Life Sciences, Department of Health Sciences, Brunel University London, United Kingdom.**

Within the frame of a fruitful cooperation and solidarity amongst Nigerian organizations and institutions, and in order to enhance and develop scientific research, we would like to take this opportunity to inform you that:

Having granted ethical approval for the current study mentioned above, I am writing to seek for your approval and assistance as the Chief Nursing Officers of the Antenatal Clinic and Postnatal Ward at the University of Port Harcourt Teaching Hospital to enable me, Mr Chisom Jolly Nwankwo to recruit potential participants from the immunization and antenatal ward. Interested participants who meet the eligibility criteria for the above stated study will be recruited and delivered with the information sheet and consent forms. In conjunction with this, I would like to ask for your permission to conduct interviews in your office with all the eligible interested respondents in the ward.

I will present you with all the relevant documents for your perusal and provide you with the information sheets regarding the current study. I will also provide you with an informed consent form (ICF) to sign. Once this stage is conducted, I will complete any further procedures, such as going-on to meet with potential participants in the ward and discussing the research with them, arranging a time and date with the interviewees to take place.

Your assistance, co-operation and time with this matter will be greatly appreciated by me and my supervisory team, as it will allow me to conduct my study and furthermore, to develop and improve scientific research in the Nigeria state.



If you have any further questions or require any additional information, please do not hesitate to contact Mr Chisom Jolly Nwankwo and my supervisors through the contact details provided at the end of this letter.

Thank you for your time and consideration.

Chisom Jolly Nwankwo

Doctoral researcher
College of Health, Medicine and Life Sciences
Department of Health Sciences
Brunel University London.
Email: jolly.nwankwo@brunel.ac.uk
M: +234 (0) 8037830658

The supervisory team:

Dr Carolyn Dunford

Divisional Lead / Senior Lecturer in Occupational Therapy
College of Health, Medicine and Life Sciences – CHMLS
Brunel University London
Email: carolyn.dunford@brunel.ac.uk
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Dr Meriel Norris

Reader
College of Health, Medicine and Life Sciences – CHMLS
Brunel University London
Email: meriel.norris@brunel.ac.uk
M: +44 1895 268685

Appendix 3: Gatekeeper Approval/ Acceptance (UPTH)

UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL

P.M.B. 6173. PORT HARCOURT - website: www.upthng.com

CHAIRMAN
HIS EXCELLENCY
MUHKTAR AHMED ANKA (SARDAUNAN ANKA)

DIRECTOR OF ADMINISTRATION
EREBI WADIRI
OND (Law) B.Sc, M.Sc, FICA



CHIEF MEDICAL DIRECTOR
PROF. HENRY A. A. UGBOMA, MNIM, JP
B.Sc, MBBS, FWACS, FICS

CHAIRMAN, MEDICAL ADVISORY COMMITTEE
PROF. PRINCEWILL C. STANLEY
B.Med (Pharmacol) MBBS, FWACP, FMCpsy, MNIM

14th March 2022

Dear Mr Nwankwo

Letter of Acceptance

With regards to your letter, this is to acknowledge the receipt of your letter. It is good to know that you are intending to conduct a research at the University of Port Harcourt Teaching Hospital. You are welcome in advance to carry out your research, my team and I will give you the needed assistance. As a staff of UPTH, I am sure you can find your way around the facility. Should you require assistance with directions, the SERVICOM desk will be there to direct you, or you could contact me directly.

I look forward to working with you and for the outcome of the research.

Best wishes

Mrs Etukudo Okon (Bsc, Msc,RN,MW)

Chief Nursing Officer, UPTH

Appendix 4: Participant Information Sheet: Parents

Information Sheet for Participants (Parents)

Research title:

Exploring the care pathway, attitude and perception of parents and healthcare stakeholders to access to newborn screening for hearing loss in Port Harcourt, Nigeria.

Invitation

My name is Chisom Jolly Nwankwo, and I am a doctoral researcher at Brunel University London, in the United Kingdom. I am conducting research on the parental attitudes and perceptions of newborn screening for hearing loss. Childhood hearing loss is one of the most common health problems in the world. One recommended step to tackle this is early screening of newborns for hearing loss, six months after birth. This often does not occur, and my research is trying to explore the reasons that may influence whether that screening takes place or not.

This sheet contains pertinent information regarding my study, and I would like to invite you to take part in it. Before you decide to participate in this study, I would like you to have a good understanding of why it's being done and what it will entail. This information sheet was created to assist you in deciding whether or not to participate. Please read the following material carefully and discuss it with your friends and family before deciding whether or not to participate. If something is unclear or if more information is needed, please do not hesitate to inquire. My contact details can be found at the end of this sheet.

1. What is the purpose of the study?

Childhood hearing loss is a major problem, and the purpose of this study is to find out the attitudes of parents and their perceptions towards screening their newborn baby for hearing loss. I am undertaking the study in Port Harcourt, at the University of Port Harcourt Teaching Hospital, which will involve interviewing parents and other healthcare professionals, but this information sheet is for parents. In addition, I want to understand from your perspective the various care pathways for newborn hearing loss in which you access or are aware and the screening process in general.

2. Why have I been invited to participate?

You have been invited to participate in this research because you are parents of a young baby or will soon have a baby and you are involved in deciding whether they access screening or not. I want to talk to you to understand your thoughts on this.

3. Do I have to take part?

It is up to you to decide whether or not to take part, and participation in this study is completely voluntary. If you do decide to take part, you will be given this information sheet to keep and you will be asked to sign a consent form. You are under no obligation to participate in this study, and you may withdraw at any time without it affecting your normal care in any way.

4. What will happen to me if take part?

If you decide to participate in this study, you will be invited to an interview that will last approximately 45-60 minutes. I will ask you about your perception and attitudes towards screening your baby for hearing loss. The interview will be audio recorded. I will send you the project package, which includes an Information Sheet which you are reading now, an Informed Consent Form (ICF), and a demographic profile form for participants. To begin, you will be asked to sign the ICF. You will also be asked to fill out the demographic profile form, which includes demographic data for which there are no right or wrong responses. You will be able to skip a question and move on to the next one if you do not desire to answer it. Any information you provide will not be used to identify you personally in order to maintain confidentiality. The interview will take place in an office at the University of Port Harcourt Teaching Hospital.

5. What are the possible disadvantages and risks of taking part?

There are no known risks or side effects associated with participation in this study. If any of the questions make you uncomfortable, you can skip that question or opt out of the study entirely. The information will be erased if you decide to quit at any point during the interview before it is completed. You may choose to withdraw at any time before 5th of September 2022. However, the information you provided cannot be withdrawn after the completion of the study. To protect your data, every care will be taken, including the use of password-protected computers. The information you provide will only be seen by the principal researcher and the supervising team.

6. What are the possible benefits of taking part?

You will not benefit directly from taking part in this study. Nevertheless, this study will provide us with the opportunity to gain a better understanding of how the various perceptions and attitudes identified contributes to access/uptake of newborn screening for hearing loss in Port Harcourt. The information you supply could assist researchers, public health experts and health authorities to provide targeted policies/interventions which will help to prompt and enhance access to newborn screening for hearing loss in Port Harcourt, hence promoting early identification, treatment and rehabilitation measures of newborn hearing loss in Port Harcourt.

7. What if something goes wrong?

If something goes wrong, then please contact the research team as soon as possible to explain the problem. We will work with you to find a resolution. If you would like to complain or discuss the problem with someone outside of the research team then please contact Professor Louise Mansfield, Chair, College of Health and Life Sciences

Research Ethics Committee louise.mansfield@brunel.ac.uk

8. Will my taking part in this study be kept confidential?

“The information you provide will only be seen by the principal researcher and the supervising team”. Unless required by law, this information will be kept private and will not be disclosed to third parties without your written permission. Participants in this study will have anonymity and confidentiality. All personal information gathered during the research will be kept strictly confidential. All personally identifiable data will be encrypted or erased. The information gathered will be analysed and anonymously kept on a password-protected computer. All of these documents will be kept safe in one drive according to General Data Protection Regulation (GDPR) compliance and backed up. It will be destroyed at the completion of the study. All identifying information about the participants will be erased once the data collection is concluded.

Please note that if there are any safeguarding issues, involving indications of harm or risk of harm to any person, this will be referred as appropriate, and it would be necessary to breach confidentiality to do this.

9. Will I be recorded, and how will the recording be used?

The interview will be audio recorded, transcribed and any real name or identifying information will not be reported in the findings. The recording will be deleted as soon as it is fully transcribed.

10. What will happen to the results of the research study?

The interview will be transcribed and analysed and written up within my PhD thesis which will be freely available to access at the Brunel University's library. The writing may include your quotes and those of other participants without disclosing your identity. The findings of this study will be used for educational purposes, which includes conference papers and journal publications within the relevant academic journals. A copy of the final report will also be submitted at the University of Port Harcourt Teaching Hospital (UPTH) and the research ethics committee of UPTH.

11. Who is organising and funding the research?

This study is self-funded

12. Who has reviewed the study?

Both Brunel Research Ethics Committee and University of Port Harcourt Teaching Hospital Research Ethics Committee have approved the study.

13. Research integrity

Brunel University London is committed to compliance with the Universities UK Research Integrity Concordat. You are entitled to expect the highest level of integrity from our researchers during the course of their research.

14. Contact for further information

Please do not hesitate to contact one of the members of the study team named below if you have any questions or would want to discuss this topic further.

Chisom Jolly Nwankwo

Doctoral researcher

College of Health, Medicine and Life Sciences Department of Health Sciences Brunel University London.

Email: jolly.nwankwo@brunel.ac.uk

M: +234 (0) 8037830658

The supervisory team:

Dr Carolyn Dunford

Divisional Lead / Senior Lecturer in Occupational Therapy

College of Health, Medicine and Life Sciences – CHMLS

Brunel University London

Email: carolyn.dunford@brunel.ac.uk

M: +44 1895 268283

Dr Meriel Norris

Reader

College of Health, Medicine and Life Sciences – CHMLS

Brunel University London

Email: meriel.norris@brunel.ac.uk

M: +44 1895 268685

For Complaints

Kindly contact **Professor Louise Mansfield**, Chair, College of Health and Life Sciences
Research Ethics Committee louise.mansfield@brunel.ac.uk

Thank you for reading this information sheet and for considering taking part in this important study. We would very much appreciate it if you will be able to help us.

Appendix 5: Participant Demographic Form



DD/MM/YYYY

Demographic information	Response
Participant initials:	
Age Range.	18-45 46 and above
Gender:	Male Female
Religion:	☐ Christian ☐ Muslim ☐ Atheist ☐ Others ☐ Don't know
Place of interview:	
Date of interview:	
Time of interview:	
Email address:	
Mobile number:	

Thank you again for taking the time to complete this participant demographic information sheet

Appendix 6: Interview topic guide: Parents

SECTION 1: INTRODUCTION

Thank you for taking the time to meet with me today.

My name is Chisom Jolly Nwankwo. I would like to explore your views in relation to access to newborn screening for hearing loss in Port Harcourt.

I would like to reassure you that this interview is confidential. This means that your responses will be shared only with research team members. We will ensure that any information included in our report does not identify you as the respondent.

You have signed a consent form which outlines your rights as a study participant

My contact information is provided on the participants information sheet if you have any questions or concerns.

I request your permission to audio-record this interview so that your responses can be transcribed later. The interview should last for approximately 45-60 minutes and recording it will provide a more accurate representation of your responses to the questions. Recording will also facilitate my analysis of the data during the course of this project.

It is important to maintain the integrity of your words; therefore, I may ask you to review the transcripts if I have any challenge in understanding clearly what you meant in your response which was earlier on recorded.

Please feel free to discuss your views openly during the interview. From time to time, I may ask for further clarification to assist me in understanding your response. Please remember, all responses are confidential.

If you do not have any further questions, I would like to briefly introduce you to the subject of this interview. Thank you for sharing your thoughts with me. Let us begin.

SECTION 2: INTERVIEW QUESTIONS

Beliefs about hearing loss in a general sense.

Broad question: Can you tell me what you know about hearing loss?

Can you also tell me what you know about screening for newborn hearing loss?

Probes:

- How do people view it?
- So, tell me, what is your view of hearing loss
- What do you think causes hearing loss?
- What do you know about newborn screening for hearing loss?
- How do you think perceptions about hearing loss influences newborn screening for hearing loss?
- Do you perceive hearing loss to be a serious issue in Port Harcourt?
- Could you tell me more about your thinking on that?
- How do you think a person to be susceptible or at risk of hearing loss?
- What are those signs which you perceive could be hearing loss?
- Tell me how you know these are hearing loss signs?
- How do you view people with hearing loss?
- Could you tell me more about this?

1. Influence on access to newborn screening for hearing loss.

Broad question: From your own understanding, how do people view and react towards hearing loss?

Probes:

- Could you tell me more about your thinking on that?
- How can we really identify hearing loss early?
- What do you know about the screening?
- Tell me more about your thinking?
- How do you think we can prevent newborn hearing loss?
- Could you tell me more about your thinking on that?
- Do you know how the screening is done?
- How do you think perceptions about hearing loss influences newborn screening for hearing loss?
- How do you feel personally about screening your child for newborn hearing loss?
- Do you know if the screening is available?

- Do you think the screening is free?
- Do you think the screening will affect your child in any way?
- Could you tell me more about that please?
- What are all the other treatment options available in which you or others may seek?
- Could you please tell me how effective these measures are?
- Tell me more about their effectiveness please?
- Why do you think people would access them?
- In your own view, how can you differentiate their effectiveness with medical/formal screening/treatment?
- I would like to know more about that please.

2. Perceived benefits of newborn screening for hearing loss.

Broad question: What are your thoughts on the purpose of screening newborn for hearing loss.

Probes:

- Would you please tell me more about the benefits?
- Do these benefits motivate you into screening your child when necessary? If yes, how?
- What other form of intervention would you have accessed?
- Would you say more about that please?
- How do you know these forms are beneficial?
- Was that practice beneficial?
- If you have the opportunity, would you screen your child for hearing loss?
- If the screening is not free, would you pay for it?
- Do you think screening is important for every child?
- Tell me more about that please.

3. Perceived barriers to access/uptake of newborn screening for hearing loss.

Broad question: Tell me about the challenges that contribute to why you or others do not screen your child for hearing loss?

Prompts:

- Can you please say more about those barriers?
- How do you feel about it?
- From your opinion, how do you think people perceive these barriers?
- Do you think these perceptions has an impact in their attitude to screening their child?
If yes, how?

- Can you please tell me more about your thinking?
- What you have explained as barriers, are they also felt by others?
- How did you know about this?
- How do you think these challenges and barriers can be minimised?
- I would like to hear you say more about this please.

4. Newborn screening for hearing loss.

- What do you think needs to be done to improve newborn screening for hearing loss in Port Harcourt?
- In your own view, how do you think improving health services in Port Harcourt can influence perceptions and attitudes towards early screening and identification of newborn screening for hearing loss?

SECTION 3: CLOSURE

We have been able to cover a deal of ground. I am very grateful to you for being patient with me. Your views are very important to us.

Do you think there is anything we have missed out?

Do you have any other comments, suggestions or questions about what we have discussed or about the research as a whole?

We will send your interview transcript to you so you can confirm your accuracy.

We will send you a summary of the research findings sometime in the year, 2022 to review and make any changes you thought would be necessary.

You are welcome to have a full copy of the final report too after I finish with my study.

Thank you very much for taking the time to talk to me.

Appendix 7: Interview Topic Guide (Healthcare Stakeholders)

SECTION 1: INTRODUCTION

Thank you for taking the time to meet with me today.

My name is Chisom Jolly Nwankwo. I would like to explore your views in relation to access to newborn screening for hearing loss in Port Harcourt.

I would like to reassure you that this interview is confidential. This means that your responses will be shared only with research team members. We will ensure that any information included in our report does not identify you as the respondent.

You have signed a consent form which outlines your rights as a study participant. I want to remind you that you may withdraw from this research at any time. My contact information is provided on the participants information sheet if you have any questions or concerns.

I request your permission to audio-record this interview so that your responses can be transcribed later. The interview should last for approximately 45-60 minutes and recording it will provide a more accurate representation of your responses to the questions. Recording will also facilitate my analysis of the data during the course of this project.

It is important to maintain the integrity of your words; therefore, I may ask you to review the transcripts if I have any challenge in understanding clearly what you meant in your response which was earlier on recorded.

Please feel free to discuss your views openly during the interview. From time to time, I may ask for further clarification to assist me in understanding your response. Please remember, all responses are confidential.

If you do not have any further questions, I would like to briefly introduce you to the subject of this interview. Thank you for sharing your thoughts with me. Let us begin.

SECTION 2: INTERVIEW QUESTIONS

1. Care pathways for hearing loss in Nigeria.

- What do you know about childhood hearing loss?
- What do you know about the pathways?
- What do you think about the current processes?

Probes:

- Can you tell me more about the care pathways to access to newborn screening for hearing loss in Nigeria?
- Could you identify those involved in the provisions of such care and screening?
- Can you tell me how they associate with each other in the provision of such care/screening?
- Tell me a bit more on how they relate with each other?
- How do you think these services are rendered by these providers?
- Is it free?
- How is it done?
- Could you tell me more about your thinking?
- What role do you play in the care pathways newborn hearing loss?
- What challenges are encountered in your association with other care providers?
- Can you tell me more about that?
- In your view as health professional, how do you think these variety of pathways (if any) impacts on perceptions and attitudes towards newborn screening for hearing loss?
- Could you tell me more about your thinking on that?
- Why do you think parents access other care pathways to newborn hearing loss?
- How do you think effectiveness of the various pathways for hearing loss can be assessed?
- How do you think culture play a role in the in the access to newborn screening for hearing loss?
- How is this an issue in Port Harcourt?
- How do you think this can be dealt with?

2. Influence on access to newborn screening for hearing loss.

Broad question: From your own understanding, how do people view and react towards hearing loss?

Probes:

- Could you tell me more about your thinking on that?
- How can we really identify hearing loss early?
- What do you know about the screening?
- Tell me more about your thinking?
- How do you think we can prevent newborn hearing loss?
- Could you tell me more about your thinking on that?
- Do you know how the screening is done?
- How do you think perceptions about hearing loss influences newborn screening for hearing loss?
- How do you feel personally about screening your child for newborn hearing loss?
- Do you know if the screening is available?
- Do you think the screening is free?
- Do you think the screening will affect your child in any way?
- Could you tell me more about that please?
- What are all the other treatment options available in which you or others may seek?
- Could you please tell me how effective these measures are?
- Tell me more about their effectiveness please?
- Why do you think people would access them?
- In your own view, how can you differentiate their effectiveness with medical/formal screening/treatment?
- I would like to know more about that please.

3. Perceived benefits of newborn screening for hearing loss.

Broad question: What are your thoughts on the purpose of screening newborn for hearing loss.

Probes:

- Would you please tell me more about the benefits?
- Do these benefits motivate you into screening your child when necessary? If yes, how?
- What other form of intervention would you have accessed?
- Would you say more about that please?

- How do you know these forms are beneficial?
- Was that practice beneficial?
- If you have the opportunity, would you screen your child for hearing loss?
- If the screening is not free, would you pay for it?
- Do you think screening is important for every child?
- Tell me more about that please.

4. Perceived barriers to access/uptake of newborn screening for hearing loss.

Broad question: Tell me about the challenges that contribute to why you or others do not screen your child for hearing loss?

Prompts:

- Can you please say more about those barriers?
- How do you feel about it?
- From your opinion, how do you think people perceive these barriers?
- Do you think these perceptions has an impact in their attitude to screening their child?
If yes, how?
- Can you please tell me more about your thinking?
- What you have explained as barriers, are they also felt by others?
- How did you know about this?
- How do you think these challenges and barriers can be minimised?
- I would like to hear you say more about this please.

5. Newborn screening for hearing loss.

- What do you think needs to be done to improve newborn screening for hearing loss in Port Harcourt?
- In your own view, how do you think improving health services in Port Harcourt can influence perceptions and attitudes towards early screening and identification of newborn screening for hearing loss?

SECTION 3: CLOSURE

We have been able to cover a deal of ground. I am very grateful to you for being patient with me. Your views are very important to us.

Do you think there is anything we have missed out?

Do you have any other comments, suggestions or questions about what we have discussed or about the research as a whole?

We will send your interview transcript to you so you can confirm your accuracy.

We will send you a summary of the research findings sometime in the year, 2022 to review and make any changes you thought would be necessary.

You are welcome to have a full copy of the final report too after I finish with my study.

Thank you very much for taking the time to talk to me.

Appendix 8: Participant Information Sheet: Healthcare Stakeholders

Information Sheet for Participants (Healthcare Stakeholders)

Research title:

Exploring the care pathway, attitude and perception of parents and healthcare stakeholders to access to newborn screening for hearing loss in Port Harcourt Nigeria.

Invitation

My name is Chisom Jolly Nwankwo and I am a PhD research student at Brunel University London, in the United Kingdom. I am conducting research on the above title. This sheet contains pertinent information regarding my study, and I would like to invite you to take part in it. Before you decide to participate in this study, I would like you to have a good understanding of why it's being done and what it will entail. This information sheet was created to assist you in deciding whether or not to participate. Please read the following material carefully. If something is unclear or if more information is needed, please do not hesitate to inquire.

1. What is the purpose of the study?

The purpose of this study is to explore the care pathway, attitude and perception of parents and healthcare stakeholders to access to newborn screening for hearing loss.

I am undertaking the study in Port Harcourt, at the University of Port Harcourt Teaching Hospital, which will involve interviewing parents and other healthcare professionals, but this information sheet is for healthcare stakeholders. In addition, I want to understand from your perspective the various care pathways for newborn hearing loss in which you access or are aware.

2. Why have I been invited to participate?

You have been invited to participate in this research because you meet all the inclusion and exclusion criteria. We want to find out the attitudes of parents to access to newborn screening for hearing loss in order to possibly enhance the uptake of newborn screening for hearing loss which is very important for early identification and treatment for hearing loss.

3. Do I have to take part?

It is up to you to decide whether or not to take part, and participation in this study is completely voluntary. If you do decide to take part, you will be given this information sheet to keep together with a copy of the signed consent form. You are under no obligation to participate in this study, and you may withdraw at any time without it affecting your normal care in any way.

4. What will happen to me if take part?

If you decide to participate in this study, I will send you the project package, which includes an Information Sheet, an Informed Consent Form (ICF), and a demographic profile form for participants. To begin, you will be asked to fill out the demographic profile form, which includes demographic data for which there are no right or wrong responses. You will be able to skip a question and move on to the next one if you do not desire to answer it. Any information you provide will not be used to identify you personally in order to maintain confidentiality. After that, you will be asked to sign the ICF and grant authorization.

5. What are the possible disadvantages and risks of taking part?

There are no known risks or side effects associated with participation in this study. If any of the questions make you uncomfortable, you can skip that question or opt out of the study entirely. The information will be erased if you decide to quit at any point during the interview before it is completed. However, the information you provided cannot be withdrawn after the completion of the study. To protect your data, every care will be taken, including the use of password-protected computers. The information you provide will only be seen by the principal researcher and the supervising team.

6. What are the possible benefits of taking part?

You will not benefit directly from taking part in this study. Nevertheless, this study will provide us with the opportunity to gain a better understanding of how the various perceptions and attitudes identified contributes to access/uptake of newborn screening for hearing loss in Port Harcourt. The information you supply could assist researchers, public health experts and health authorities to provide targeted policies/interventions which will help to prompt and enhance access to newborn screening for hearing loss in Port Harcourt, hence promoting early identification, treatment and rehabilitation measures of newborn hearing loss in Port Harcourt.

7. What if something goes wrong?

If you are harmed by taking part in this research project, there are no special compensation arrangements. If you are harmed due to someone's negligence, then you may have grounds for a legal action, but you may have to pay for it. In case of complaints, you can contact the Chair of Brunel University research ethics and UPTH research ethics committee. College of Health and Life Sciences Research Ethics

Committee Chair – Professor Louise Mansfield (Louise.Mansfield@brunel.ac.uk). You will be directed to the appropriate office at the at the University of Port Harcourt Teaching Hospital which is the research location.

8. Will my taking part in this study be kept confidential?

Outside of the research team, none of the information you submit will be disclosed. Unless required by law, this information will be kept private and will not be disclosed to third parties without your written permission. Participants in this study are guaranteed anonymity and confidentiality. All personal information gathered during the research will be kept strictly confidential. All personally identifiable data will be encrypted or erased. The information gathered will be analysed and anonymously kept on a password-protected computer. All of these documents will be kept safe in one drive according to GDPR compliant and backed up. It will be destroyed at the completion of the study. All identifying information about the participants will be erased once the data collection is concluded.

Please note that if there are any safeguarding issues, involving indications of harm or risk of harm to any person, this will be referred as appropriate and it would be necessary to breach confidentiality to do this.

9. Will I be recorded, and how will the recording be used?

The interview will be audio recorded, transcribed and any real name or identifying information will not be reported in the findings.

10. What will happen to the results of the research study?

The interview will be transcribed and analysed and written up within my PhD thesis which will be freely available to access at the Brunel University's library. The writing may include your quotes and those of other participants without disclosing your identity. The findings of this study will be used for educational purposes, which include conference papers and journal publications within the relevant academic journals.

11. Who is organising and funding the research?

This study is self-funded

12. Who has reviewed the study?

Both Brunel Research Ethics Committee and University of Port Harcourt Teaching Hospital Research Ethics Committee have approved the study.

13. Research integrity

Brunel University London is committed to compliance with the Universities UK Research Integrity Concordat. You are entitled to expect the highest level of integrity from our researchers during the course of their research.

14. Contact for further information and complaints

Please do not hesitate to contact one of the members of the study team named below if you have any questions or would want to discuss this topic further.

Chisom Jolly Nwankwo

Doctoral researcher

College of Health, Medicine and Life Sciences

Department of Health Sciences Brunel University London.

Email: jolly.nwankwo@brunel.ac.uk

M: +234 (0) 8037830658

The supervisory team:

Dr Carolyn Dunford

Divisional Lead / Senior Lecturer in Occupational Therapy

College of Health, Medicine and Life Sciences – CHMLS

Brunel University London

Email: carolyn.dunford@brunel.ac.uk

M: +44 1895 268283

Dr Meriel Norris

Reader

College of Health, Medicine and Life Sciences – CHMLS

Brunel University London

Email: meriel.norris@brunel.ac.uk

M: +44 1895 268685

Thank you for reading this information sheet and for considering taking part in this important study. We would very much appreciate it if you will be able to help us.

Appendix 9: Consent Form

CONSENT FORM

College of Health, Medicine and Life Sciences, Brunel University London

STUDY TITLE: Exploring the care pathway, attitude and perception of parents and healthcare stakeholders to access to newborn screening for hearing loss in Port Harcourt Nigeria.

NAME OF PRINCIPAL INVESTIGATOR: CHISOM JOLLY NWANKWO

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT BETWEEN 18/04/2022 AND 30/11/2023

The participant (or their legal representative) should complete the whole of this sheet.

	YES	NO
Have you read the Participant Information Sheet?		
Have you had an opportunity to ask questions and discuss this study?		
Have you received satisfactory answers to all your questions?		
Do you understand that you will not be referred to by name in any report concerning this study?		
Do you understand that: • You are free to withdraw from this study at any time • You don't have to give any reason for withdrawing • Choosing not to participate or withdrawing will not affect your future care? • You can withdraw your data any time up to 05/09/2022		
I agree to my interview being audio recorded		
I agree to the use of non-attributable quotes when the study is written up or published		
The procedures regarding confidentiality have been explained to me		
I agree that my anonymised data can be stored and shared with other researchers for use in future projects		
I agree to take part in this study		

Signature of research participant:

Print name:

Date:

Appendix 10: Ethics Approval-UPTH

UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL

P.M.B. 6173. PORT HARCOURT - website: www.upthng.com

CHAIRMAN
HIS EXCELLENCY
MUHKTAR AHMED ANKA (SARDAUNAN ANKA)

DIRECTOR OF ADMINISTRATION
EREBI WADIRI
OND (Law) B.Sc, M.Sc, FICA



CHIEF MEDICAL DIRECTOR
PROF. HENRY A. A. UGBOMA, MNIM, JP
B.Sc, MBBS, FWACS, FICS

CHAIRMAN, MEDICAL ADVISORY COMMITTEE
PROF. PRINCEWILL C. STANLEY
B.Med (Pharmacol) MBBS, FWACP, FMCpsy, MNIM

UPTH RESEARCH ETHICS COMMITTEE

UPTH/ADM/90/S.II/VOL.XI/1277

25th November 2021

CHISOM, JOLLY NWANKWO

College of Health, Medicine and Life Sciences,
Department of Health Sciences,
Brunel University, London, United Kingdom

Dr. D. D. Alasia
(Consultant Physician)
Chairman

Asst. Director of Admin. (CS&T)
Member

Asst. Director (Nursing Services)
Member

Asst. Director (Pharm. Services)
Member

Barr. Akuro R. George
(Legal Adviser, UPTH)
Member

Ven. Prof. W. O. Wotoghe-Weneka
(St. Luke's Anglican Church, Emuoha)
Member

Barr. (Mrs.) B. J. Thom-Manuel
(Asst. Chief, State Counsel/ Head,
Legal)
Secretary

ETHICAL APPROVAL

EXPLORING THE CARE PATHWAY, ATTITUDE AND PERCEPTION OF
PARENTS AND HEALTHCARE STAKEHOLDERS TO ACCESS TO NEWBORN
SCREENING FOR HEARING LOSS IN PORT HARCOURT, NIGERIA.

We refer to your letter dated 19th November 2021 requesting for Ethical
Approval of your research project titled: **EXPLORING THE CARE PATHWAY,
ATTITUDE AND PERCEPTION OF PARENTS AND HEALTHCARE
STAKEHOLDERS TO ACCESS TO NEWBORN SCREENING FOR HEARING
LOSS IN PORT HARCOURT, NIGERIA.**

After a critical appraisal of your proposal by the University of Port Harcourt
Teaching Hospital Research Ethics Committee, approval is hereby given to you
to commence your study.

Note the following:

1. The study can only be started after it is approved by the examining body.
2. The approved proposal must be presented to your department/unit.
3. We will conduct periodic inspection of your methods to ascertain best practices.
4. At the completion of your study, a copy of the study should be submitted to the Hospital.

The Hospital reserves the right to withdraw this approval if at any time during
the conduct of the study you infringe on its ethical regulations or the ethical
rights. At the completion of your study, a copy of the study should be submitted
to the Hospital.


Barr. (Mrs.) B. J. Thom-Manuel
Secretary
For: Chairman

Appendix 11: Ethics Approval-Brunel University



University Research Ethics Committee
Brunel University London
Kingston Lane
Uxbridge
UB8 3PH
United Kingdom
www.brunel.ac.uk

23 May 2022

LETTER OF CONDITIONAL APPROVAL

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT BETWEEN 23/05/2022 AND 30/11/2023

Applicant (s): Mr Chisom Jolly Nwankwo

Project Title: Exploring the attitudes and perceptions of parents and healthcare stakeholders to access to newborn screening for hearing loss in Port Harcourt, Nigeria.

Reference: 31757-MHR-Apr/2022- 39214-2

Dear Mr Chisom Jolly Nwankwo,

The Research Ethics Committee has considered the above application recently submitted by you.

The Chair, acting under delegated authority has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- Please ensure that the voluntary nature of participation is made absolutely clear to participants (particularly new and expectant mothers attending the hospital) and that your approach does not place them under any undue pressure to participate.
- Please ensure that pilot study participants are made aware of the pilot and the subsequent use (or omission) of their data.
- PIS: Please amend the following statement: 'If you do decide to take part, you will be given this information sheet to keep together with a copy of the signed consent form' - this should read "If you do decide to take part, you will be given this information sheet to keep and you will be asked to sign a consent form".
- Please remove the reference to grant authorisation within your PIS documents. When collecting personal data (such as demographic information), please ensure you collect only what you need, and if possible, ask participants to select an age range instead of requesting participants' actual age.
- **The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee by way of an application for an amendment.**
- **Please ensure that you monitor and adhere to all up-to-date local and national Government health advice for the duration of your project.**

Please note that:

- Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the relevant Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the relevant Research Ethics Committee.
- Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.
- The Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.
- If your project has been approved to run for a duration longer than 12 months, you will be required to submit an annual progress report to the Research Ethics Committee. You will be contacted about submission of this report before it becomes due.
- You may not undertake any research activity if you are not a registered student of Brunel University or if you cease to become registered, including abeyance or temporary withdrawal. As a deregistered student you would not be insured to undertake research activity. Research activity includes the recruitment of participants, undertaking consent procedures and collection of data. Breach of this requirement constitutes research misconduct and is a disciplinary offence.

Kind regards,

Page 1 of 2

Dr Derek Millard-Healy

Chair of the University Research Ethics Committee

Brunel University London

Appendix 12: Interview and Distress Protocol

Cues to distress during interview	Follow-up questions	Severe emotional distress/ safety concern? <i>Yes, Maybe or No</i>	Actions to be taken
No indication of emotional distress during the interview	How did you feel about the interview?	No	Participants will be debriefed at the end of the interview session. Additional information on available social or psychological services will be provided for anyone who may need it.
Indicate that they are experiencing a mild level of emotional distress OR show behaviours that suggest the interview may be distressing, such as incoherent speech etc.	Do you feel/think you can continue with the interview?	Maybe	• Stop the interview. • Give the participant a break. • Assess the emotional state of the participant after the break to know if he or she is in a state to continue the interview. • If respondent's distress level is more than what is expected in an interview involving a sensitive topic but he or she is willing to carry on, offer support, allow the participant time to regroup before carrying on with the interview but start with a question that may not trigger similar feeling. • Be sensitive to the feeling and behaviour of the participant. Once there is a repeat of emotional distress as you proceed, end the interview.
Indicate that they are experiencing a high level of emotional distress OR show behaviours that suggest the interview is very distressing such as incoherent speech, sudden silence, crying, flashbacks, etc.	Do you feel/think you can continue with the interview? Will you want to talk to someone about your emotional/psychological state?	Yes	• Stop the interview. If the participant shows that he or she is experiencing severe distress, more than what is expected in an interview involving a sensitive topic, end the interview process. • Provide information on relevant organisations he or she could access for support.

Appendix 13: Risk Assessment and Management

College of Health, Medicine and Life Sciences Research Ethics Committee Health Sciences

Exploring the care pathway, attitude and perception of parents and healthcare stakeholders to access to newborn screening for hearing loss in Port Harcourt Nigeria.

RESEARCH ETHICS RISK ASSESSMENT AND MANAGEMENT

(Overleaf)

For Completion by the Researcher:

Identified Risks	Likelihood	Potential Impact/Outcome	Risk Management/Mitigating Factors
Identify the risks/hazards present	High/Medium/Low	Who might be harmed and how?	Evaluate the risks and decide on the precautions, e.g., Health & Safety
Transmission of Covid-19 to researcher(s) and/or participants	Low	Researcher(s) and/or participant(s) may contract the Covid-19 virus	All Covid-19 safety protocols will be dully observed including wearing of face masks by the researcher and participants and maintain social distancing.
Potential emotional discomfort to participants (this is not a certainty, but issues relating to hearing loss are considered sensitive due to religion and culture.	Low	<i>Potential emotional discomfort to some participants</i>	The researcher will undertake sensitivity training (online via futurelearn) prior to conducting data collection, to learn techniques by which to make sure questions are appropriate for participants, avoiding undue pressure or stress for them. Necessary actions in this regard may also include taking a break, pausing and suspending or terminating the interview, and providing information on available mental health services and organisations that participants may be interested to contact to help manage their distress.

Identified Risks	Likelihood	Potential Impact/Outcome	Risk Management/Mitigating Factors
Conducting sensitive research can be emotionally demanding, and there is a possibility that researchers can find themselves in dangerous situations	<i>Low</i>	<i>Researcher might get emotional, and the gatekeeper has advised about the safety of the research location.</i>	A safety procedure will be designed and applied during the data collecting process to capture the safety plans, such as continual communication with the supervisory team via Zoom or Teams calls to keep them informed of the progress. The researcher will maintain contact with his supervisors at least once every two days to discuss progress and obstacles encountered during the data collection process. All interviews will take place during the day and on-site at the hospital. The researcher will make a point of leaving the hospital and arriving at his hotel before nightfall for security reasons, since he had been advised by the gatekeeper of some robbery instances in the area at night.

Appendix 14: Field Work Risk Assessment

College/ Service /Institute: College of Health, Medicine and Life Sciences

Individual Traveller: Chisom Jolly Nwankwo

Position: Researcher

Topic: Exploring the care pathway, attitude and perception of parents and healthcare stakeholders to access to newborn screening for hearing loss in Port Harcourt Nigeria.

Dates of Overseas Travel: 6th June 2022 Number in party : 1

Attach a copy of the itinerary, if applicable

Brief description of work activity being assessed

Here you should briefly outline the type activity that will be occurring (travel, lab work, interviews of campus etc.).

My research involves interviewing the participants that will be recruited at the University of Port Harcourt Teaching Hospital in Port Harcourt Nigeria. This means that I will be travelling to Nigeria (a copy of itinerary attached) to conduct the interview. I am very familiar with the interview location because I have lived and worked at the interview location. The interview location is very close to my accommodation, I could walk down to the location or drive (I am licenced to drive) depending on the weather condition as it rains a lot in Port Harcourt. The accommodation is safe and secured. During the research, there is a risk of transmission of Covid-19 to researcher and/or participants. Therefore, all Covid-19 safety protocols will be dully observed including wearing of face masks by the researcher and participants and maintaining social distancing.

Additionally, the researcher will ensure at all times that I and my participants must follow the guidance on self-isolation if I or my participants or anyone in our household shows coronavirus symptoms. Those who are self-isolating because they or somebody they live with has Coronavirus symptoms will do so in line with NHS guidance.

During the research, there might be emotional discomfort to participants (this is not a certainty, but issues relating to hearing loss are considered sensitive due to religion and culture. The researcher will undertake sensitivity training (online via Futurelearn) prior to conducting data collection, to learn techniques by which to make sure questions are appropriate for participants, avoiding undue pressure or stress for them. Necessary actions in this regard may also include taking a break, pausing and suspending or terminating the interview, and providing information on available mental health services and organisations that participants may be interested to contact to help manage their distress.

Things to consider within the assessment – this list may not be exhaustive

(Overleaf)

Hazards	Who might be harmed	Controls - What are you doing	Outline any other steps to manage the risk	Action by whom	Action by when
	Individual traveller	Please summarise below the steps that you are taking			
1 Lack of planning					
Travel arrangements to and from the location	Researcher	I will ensure I check the travel restrictions. Currently there are no travel restrictions to Nigeria. I will make sure I follow the Covid-19 guidelines and rules advised by the aircraft and I will wear a face covering and maintain social distancing.	I will initially travel by air to Nigeria and I will follow all DVT / dehydration precautions advised by aircraft cabin crew.	Researcher	06/06/2022
Internal travel arrangements at the destination, if applicable.	Researcher	There is no known potential harm to the researcher. The study location is very close to the researcher's accommodation. He will walk or drive to the location depending on the weather condition. The accommodation, hospital and environment is safe and secured. Notwithstanding, the researcher will ensure he leaves the study location early to his accommodation.	The mode of transportation is suitable for the researcher. The participants might not need to travel specifically for the interview as they will already be at the hospital during the interview days.	Researcher	06/06/2022
Accommodation arrangements at the destination	Researcher	The accommodation is in safe location, of acceptable standard for fire, security and hygiene. It is also very close to the study location	There will be no face to face meetings at the accommodation. All meetings and interview will take place at the study location. On arrival, I will check the fire precautions and evacuation routes.	Researcher	06/06/2022
Insurance and medical cover arrangements	Researcher	The research is self funded and the researcher bears the responsibility of all the financial arrangements	N/A	Researcher	06/06/2022
All participants have up to date travel documentation for the destination	Researcher	The researcher is a citizen of Nigeria and do not require visa or permit to enter. Passport has been checked as valid with up to 6 months validity left	N/A	Researcher	06/06/2022
Participants details and next of kin		N/A	N/A		

Hazards	Who might be harmed	Controls - What are you doing	Outline any other steps to manage the risk	Action by whom	Action by when
Covid secure measures (please indicate the safety measures in place to reduce the likelihood of infection for both researchers and participants)		The researcher will check and monitor all Covid-19 safety protocols in place in the region. The covid-19 safety signs have been placed all around the hospital, hand wash and sanitizers are also available. All Covid-19 safety protocols will be dully observed including wearing of face masks by the researcher and participants and maintaining social distancing.	Contact the gate keeper to accertain the current safety measures in place at the hospital.	Researcher	07/06/2022
Lone working	Researcher	There are no known potential risk to lone working in the study location. However the University of Port Harcourt Teaching Hospital already have policies and procedures in place for dealing with harassment and violence. These existing procedures are sufficient. UPTH have provided a clear statement to staff and service users that harassment and violence will not be tolerated and will be treated as disciplinary offences (up to and including dismissal or, if appropriate, criminal action). Additionally, if the researcher or participants are having symptoms of covid or have tested positive, the researcher or the participant will stay ahome and avoid contact with other people for about 5 days, they will also be advised to avoid meeting people at higher risk from covid-19 for about 10 days. Should a participant or researcher test positive 48 hours after interaction, the researcher will inform the rest of the participants that came in contact with the person that tested positive to be watchful of symptoms of covid.	In some cases it may be possible for the researcher to rectify matters informally. Sometimes people are not aware that their behaviour is unwelcome and an informal discussion can lead to greater understanding and an agreement that the behaviour will cease. It may be that the individual will choose to do this themselves, or they may need support from human resources management, a manager, an employee representative, or a counsellor. The researcher also understands that sometimes informal approaches can blur the issues and cause greater problems later on, so careful judgments need to be made about whether to use formal or informal methods in addressing any issues that may arise.	Researcher	06/06/2022

Hazards	Who might be harmed	Controls - What are you doing	Outline any other steps to manage the risk	Action by whom	Action by when
2 Lack of personal fitness to travel					
Individuals declared fit and healthy to travel with no underlying ill health conditions raised	Researcher	The researcher is fit to travel and the required vaccinations have been taken	N/A	Researcher	06/06/2022
Detail any relevant disabilities that may require additional controls to be put in place	N/A	N/A	N/A	N/A	N/A
3 Lack of staffing control / conduct of the group					
Outline the staff student: ratios, if applicable.		N/A	N/A		
Arrangements made to maintain conduct during the tour and leisure time		N/A	N/A		
Terrorism and Personal safety	Researcher	There are no restrictions in the country and area of study location. The researcher is a citizen of Nigeria and has lived around the study location. He is very conversant with the locality.	The researcher will continue to check for any possible covid travel restrictions.	Researcher	06/06/2021

Hazards	Who might be harmed	Controls - What are you doing	Outline any other steps to manage the risk	Action by whom	Action by when
4 Health matters					
Tour party advised of appropriate vaccinations for the destination(s)	Researcher	The necessary immunisations and vaccinations have been taken and the researcher is fit to fly.	All preventative measures according to the hazards that have been identified will be taken.	Researcher	01/06/2022
Food poisoning advice regarding travel to the destination		I will be careful of what I eat, and drink, food and water may be contaminated in a variety of ways. Always wash my hands after going to the lavatory, before handling food and before eating.	Prior to the visit I will check on food hygiene precautions.	Researcher	06/06/2022
5 Local conditions					
Outline of local customs to be observed i.e. dress, religion and culture	N/A	The researcher is not a foreigner	N/A		
Weather and special equipment required		N/A	N/A		
Weather and special equipment required		N/A	N/A		

Hazards	Who might be harmed	Controls - What are you doing	Outline any other steps to manage the risk	Action by whom	Action by when
6 Emergencies					
Communication during visit with UK and vice versa		The supervisory team: Dr Carolyn Dunford Divisional Lead / Senior Lecturer in Occupational Therapy College of Health, Medicine and Life Sciences – CHMLS Brunel University London Email: carolyn.dunford@brunel.ac.uk M: +44 1895 268283 Dr Meriel Norris Reader College of Health, Medicine and Life Sciences – CHMLS Brunel University London Email: meriel.norris@brunel.ac.uk M: +44 1895 268685 Location Contact details Le Eldera Hotels +2348037830658 Leelderaltd@gmail.com	N/A	Researcher	N/A
Response to an emergency requiring travel to the UK		N/A	N/A		

Have you included risks relating to Covid-19 and set out appropriate mitigation?

Person(s) completing this assessment:

(Person carrying out or managing/supervising the activity day-to-day)

Name: Chisom Jolly Nwankwo

Title: Mr

Signature: Chisom Jolly Nwankwo

Date: 12/04/2022

Other person(s) commenting on this assessment

(Line Manager or Supervisor responsible for the activity, others involved in the decision-making process)

Name:

Title:

Signature:

Date:

Person approving this assessment:

(Person with overall responsibility for the activity Director of Professional Service (or delegated individual, e.g., manager or head of department), Senior Academic or Manager/Supervisor). If the research involves overseas travel, this section should be completed by the relevant Vice-Provost and Dean of College.

Name:

Title:

Signature:

Date:



Appendix 15: Systematic literature review in parental perceptions of NS for HL in Nigeria, conducted by the researcher of the current study in partial fulfilment for the award of M.Sc



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Parental perceptions to new-born screening for hearing loss in Nigeria: A systematic review



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ABSTRACT

Objective: To investigate the perceptions of parents towards universal new-born screening for hearing loss in Nigeria.

Methods: A systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) system. A comprehensive search was undertaken using multiple databases (National Library of Medicine, PubMed, Cochrane Library, Scopus, Google Scholar, and MEDLINE) published in English between 2009 and 2018. The sample size of 10 studies were retrieved by using a predefined inclusion and exclusion criteria, keywords, and Boolean operator search patterns. Data extraction and analysis and quality appraisal of the selected articles was carried out.

Results: 80% of the identified studies indicated negative perceptions of Nigerian parents towards new-born hearing loss screening programmes. Possible reasons behind such negative perceptions were categorised into demographic factors, psychological factors, behavioural factors, and service-related factors. Specifically, barriers included low income, misconceptions, mode of delivery, fear of associated risk with screening procedure, preference for traditional medicines, inappropriately designed screening programmes, cost of screening programmes, resource-limited settings, lack of awareness about risk factors and their effects.

Conclusion: The research concluded that it is necessary to focus on the range of underlying factors (including awareness and education) contributing in shaping the above mentioned negative perceptions among Nigerian parents. The findings have great implications for the theoretical researchers for developing future research path as well as practical suggestion for authorities in policymaking in the healthcare sector in Nigeria.