Co-designing tobacco control health communication with young people in Southern Nigeria

A Thesis Submitted for the Degree of Doctor of Philosophy

By

Charity Agbonisan Aienobe-Asekharen

Department of Health Sciences,
Brunel University London

2025

ABSTRACT

Co-design is a participatory approach that seeks to increase end users' involvement in designing products and services. However, there is a lack of active participation by young people in the design of tobacco control health communication, especially in African countries. This thesis has therefore engaged young people in determining and designing tobacco control health communication to inform campaign interventions.

A scoping review was conducted first to map the types of health communication focused on young people in Africa. Data sources included 20 peer-reviewed papers, WHO Global Health Observatory on anti-tobacco mass-media campaigns for 54 African countries, and 6 WHO Framework Convention reports on Tobacco Control. The review revealed the limited participation in tobacco control health communication design by young people.

To address this gap, a co-design approach using creative methods (drawing and writing, group discussions, diary) was employed. Two secondary schools in Benin City were involved in the research, with eighty-nine participants segregated into seven groups (13-19 years) engaging in 4 interconnected phases of the co-design process. The co-design process involved engaging participants in: (1) Discovery, to identify the root causes of smoking using a problem tree; (2) Idea generation, to generate communication ideas to address the identified causes using the socioecological model as a template for idea generation and message framing; (3) Ideation and prototyping, to create a health communication roadmap, including a song, twelve poster designs, and a short film using the generated ideas and messages (4) Feedback, to review co-designed materials which led to the short film being transformed into an animation.

From a co-design approach and the use of creative methods, this thesis showed that participants can actively be engaged in tobacco control health communication design in Nigeria, for example via schools. It also revealed that tobacco control campaigns focused on young people could be enhanced textually and visually to align with three key themes; the health consequences of smoking (Seeing is Believing), peer influence (Just Try it: Shades of Influence), and influence of authority figures (Positioning Authority Figures: Dimensions of Power). This thesis has demonstrated that young people are willing to inform health interventions that will impact their lives when they are made aware of the opportunity, and using a process inherently built for sharing knowledge and power.

This thesis moreover contributes one of the first examples of a participatory study using co-design in tobacco control health communication with young people in Nigeria and Africa.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

- ATCA - African Tobacco Control Alliance
- ATMs – Anti-tobacco Messages
- FSFW – Foundation for Smoke-Free World
- HWLs – Health Warning Labels
- HPECDI - Health Promotion Education & Community Development Initiative
- JBI - Joanna Briggs Institute
- LMICs - Low and Middle Income Countries
- NCDs – Non-communicable Diseases
- NGOs - Non-governmental organizations
- NTC Act - National Tobacco Control Act
- NTCA – Nigeria Tobacco Control Alliance
- NTCR - National Tobacco Control Regulation
- PRISMA-ScR Checklist - Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews
- SDGs – Sustainable Development Goals
- SHC - Society for Health Communication
- UNCRC - United Nations Convention on the Rights of the Child
- UNFPA - United Nations Population Fund
- UNICEF - United Nations Children Fund
- USA CDC – United States of America Centre for Disease Control and Prevention
- US FDA – United States Food and Drug Administration
- WHO - World Health Organization
- WHO AFRO - World Health Organization African Region
- WHO FCTC – World Health Organization Framework Convention on Tobacco Control
- WHO GHO ATMCs - World Health Organization Global Health Observatory on Anti-tobacco Mass-media Campaigns
- WHO MPOWER – WHO **M**onitor, **P**rotect, **O**ffer, **W**arn, **E**nforce, and **R**aise

LIST OF APPENDICES

AUTHOR'S DECLARATION

I, Charity Agbonisan Aienobe-Asekharen, declare that this thesis is my original work, except where otherwise acknowledged. I also declare that the materials contained in this thesis have not been submitted wholly or in part for any award or qualification other than that for which it is now submitted.

ACKNOWLEDGEMENTS

First and foremost, I give all glory and gratitude to God Almighty for His grace, wisdom, and strength throughout this PhD journey. Without His guidance, this achievement would not have been remotely possible.

My utmost appreciation goes to the heads of the two secondary schools, staff members and the eighty-nine students from the seven groups (Creative Scholars, Every Person is Classic [E.P.I.C], Excellent Stars, Phoenix aka Kakarot, Progressive Team, Teenagers Fighting Tobacco [TFT], and Young Erudite Scholars [Y.E.S]) who worked with me to co-design for tobacco smoking prevention in Nigeria. Thank you for trusting me, being open-minded to accommodate the study in your space and for dedicating your time to work with me.

My heartfelt appreciation goes to my beloved spouse (Clement Asekharen) for his unwavering support, patience, and encouragement throughout this PhD journey from the first draft of my rejected funding applications. You have shown that your consistent support for my academic and professional pursuits have no boundaries. To my wonderful family (Eboreimen, Beatrice, Jennifer, Victor, Precious, and Emmanuel Aienobe), your prayers, love, and sacrifices have been a pillar of strength, and I am forever grateful. Thank you for being my constant research assistants come rain come shine.

I extend my deepest gratitude to my marvelous supervisors, Dr. Wendy Martin and Dr. Emma Norris for their invaluable guidance, insightful feedback, and unwavering support. Thank you for constantly pushing me to give my best to this journey, and for reminding me that the PhD is more than just the degree but also the person I become while pursuing the degree.

My sincere thanks to the College of Health Medicine and Life Science (CHMLS) Review Committee members for their constructive feedback, which helped refine this research.

Finally, I appreciate the Commonwealth Scholarship Commission (UK) for their generous support, without which this work would not have been possible.

Thank you all for being a significant part of my journey.

DEDICATION

This thesis is dedicated to my parents, Mr. Eboreimen and Mrs Beatrice Aienobe, who first showed me why education, and knowledge is important through their pursuits and sacrifices.

THESIS'S OUTPUTS AND OTHER RESEARCH ENGAGEMENTS

1. Awarded the World Health Organization World No Tobacco Day (WHO WNTD) Award – African Region, May 2025. Available at: https://www.who.int/news/item/19-05-2025-world-no-tobacco-day-2025-awards---meet-the-winners
2. Aienobe-Asekharen, C. (2025). "The Name of Our Group Is"….Using Group Names in a Co-design Study to promote Ownership and Participation. Paper Presented at ECQI (European Congress of Qualitative Enquiry) 2025. The University of Edinburgh, January 7 -10. Available at: https://ecqi2025.exordo.com/programme/presentation/360
3. Aienobe-Asekharen, C. (2024). "Barbie likes pink so it's not scary": Exploring Feedback on Co-designed Posters with Young People in Nigeria. Paper Presented at ACTD (Africa Conference on Tobacco Control and Development). November 13 – 14. Available at: https://actd.africa/speakers/
4. Aienobe-Asekharen, C. (2024). How Are African Countries Leveraging Health Communication for Tobacco use prevention with young people: A Scoping Review. Paper Presented at Lisbon Addictions Conference October 23 – 25. Available at: https://www.lisbonaddictions.eu/lisbon-addictions-2024/presentations/how-are-african-countries-leveraging-health-communication-tobacco-use-prevention-young
5. Aienobe-Asekharen, C., Norris, E. and Martin, W. (2024). A Scoping Review of Tobacco Control Health Communication in Africa: Moving towards Involving Young People. *International Journal of Environmental Research and Public Health*, 21(3), p.259. https://doi.org/10.3390/ijerph21030259
6. Contributed to the 2024 study on - Responses to mass media campaign messages on smoking and mental health among adults with and without mental illness who use tobacco and/or e-cigarettes: a cross-sectional survey. Available at: https://osf.io/bcpn3

CHAPTER ONE

RESEARCH OVERVIEW

1.0 Introduction

This thesis seeks to contribute to the existing literature by exploring, through a participatory approach, how in-school young people can be actively involved in determining and designing targeted health communication for tobacco control in Nigeria.

Tobacco control is gradually taking centre stage in Africa as the continent moves from being a tobacco production site to a tobacco consumption hub (Gilmore, 2015; Oyewole, Animashaun and Chapman, 2018). It is estimated that without tobacco control measures in place; Africa will have the highest regional increase in tobacco consumption by 2030 (Blecher and Ross, 2013).

Tobacco control, according to the World Health Organization Framework Convention for Tobacco Control (WHO FCTC), is ‘‘a range of supply, demand, and harm reduction strategies that aim to improve the health of a population by eliminating or reducing their consumption of tobacco products and exposure to tobacco smoke’’ (WHO FCTC, p.4). The WHO FCTC is an international treaty that provides guidance on measures for tobacco control for countries that are parties to the treaty. Nigeria being a tobacco production hub, the most populous black nation in Africa and the country that will significantly contribute to Africa’s population boom (United Nations Children’s Fund, UNICEF 2012; World Economic Forum, 2020;) is a key player in Africa’s tobacco control narrative.

Nigeria, like other parties to the WHO FCTC, has had several tobacco control policies over the past ten years. Nigeria, using the current National Tobacco Control Policy is making steady progress towards implementing the recommended excise duty on tobacco products to reduce tobacco smoking and exposure to second-hand smoke (National Tobacco Control Regulations, 2019). The aforementioned strategies (policy and excise tax) are amongst the foremost recommendations for effective tobacco control programmes (US Department of Health and Human Services, 2012). But, in Africa, there remains a vacuum within tobacco control health communication, which is one of the key attributes of successful tobacco control programmes (CDC USA, 2018; Munthali et al., 2021; WHO FCTC, 2005).

Health communication is both a science and an art that seeks to advance the health and well-being of populations through communication (Society for Health Communication SHC, 2017). Due to the multidisciplinary nature of health communication, there are several definitions and overlaps

(Schiavo, 2014; SHC, 2017). But the majority point to the role of health communication in influencing, supporting, and empowering, individuals, communities, healthcare professionals, policymakers, or special groups to adopt and sustain a behaviour or a social, organizational, and policy change that will ultimately improve individual, community, and public health outcomes (Schiavo, 2014 p.9). To empower populations to make the best decisions to achieve the best outcomes, health communication is often practiced in active collaboration with the focal population (Estrada et al., 2018; Schiavo, 2014). Given Nigeria's key role in Africa's population projections; there is a need for tobacco control measures that seek to influence, support, and empower younger populations to advance their health and well-being.

The health and well-being of young people aged 10 - 24 years as defined by the WHO is vital, as such, involving them in health research ultimately contributes to health promotion and improved health outcomes (Bailey et al., 2024; Wilson et al., 2020). The involvement of young people in health research is supported by key policies such as the UN Convention on the Rights of the Child (UNCRC) Article 12 which seeks to enforce the right to express views freely in all matters. The UNCRC Article sets the foundation for rights-based approaches which asserts that involvement of young people in health research is the right thing to do or is ethical (Coyne and Carter, 2018; Lundy, 2007). Available studies in African countries show that young people are often engaged in health communication research more often as subjects than as participants, and usually in quantitative studies (Khalbous and Bouslama, 2012; Odukoya et al., 2014). Tobacco control health communication within Africa and Nigeria also shows a lack of qualitative input by young people who can often be the most easily influenced, and the targets of the tobacco industry, as shown by the tactics employed in product marketing and educational corporate social responsibility (CSR) projects (African Tobacco Control Alliance ATCA, 2016, 2023).The paucity of targeted health communication for tobacco control informed by young people for young people in Nigeria gave rise to the focus of this research and my methodological approach.

This chapter provides a brief overview and structure of the thesis. It presents the background of the study, research problem, research aims and relevance of the study. Finally, this chapter concludes with an explanation of the organisation of this thesis.

1.1 Background to the Study

The occurrence of non-communicable diseases (NCDs) is growing globally and can chiefly be attributed to modifiable behavioural risk factors such as physical inactivity, unhealthy nutrition, tobacco smoking, and alcohol use (World Health Organization WHO, 2023). Amongst these modifiable factors, tobacco smoking remains the single most preventable cause of death (Blecher and Ross, 2013; Reitsma et al., 2021; WHO, 2023).

About 1.3 billion people worldwide are tobacco users, with 80% of these residing in low-and middle-income countries (WHO, 2023). Globally, 942 million men and 175 million women aged 15 or older are current smokers, while an estimated 25 million boys and 13 million girls aged 13–15 years smoke cigarettes or use smokeless tobacco products (Drope et al., 2018). In Africa, it is estimated that 18% of young people (21% boys, 13% girls) aged 13 -15 use any kind of tobacco product while 6.5% (9.2% boys, 3.2% girls) smoke cigarettes (WHO, 2015). Young people in Africa are also exposed to second-hand cigarette smoke, with about 29% exposed at home and 48% in public places (WHO Regional Office for Africa, 2015). Among young people in Africa, smoking does not seem to be reducing like smoking among adults (Oyewole, Animashaun and Chapman, 2018) as the tobacco industry primarily targets young people in schools to retain them as lifelong users (ATCA, 2021; 2016) who will eventually be exposed to tobacco and its associated health risks. Impulsive experimentation coupled with the advent of novel tobacco products will also further contribute to the increased burden of tobacco disease and deaths (Abraham, Egbe and Ayo-Yusuf, 2019; Lasebikan, Ola and Lasebikan, 2019). Young people aged 10 to 19 years are especially susceptible to high-risk behaviours like tobacco use, with early tobacco use exacerbating the risk of tobacco addiction in adulthood (Crews et al., 2007; WHO, 2015).

Between the years 2002 and 2030, tobacco use related deaths are projected to decrease by 9% in high-income countries but increase double fold from 3.4 to 6.8 million in low middle income countries (LMICs) (Blecher and Ross, 2013). Although Africa currently has a low prevalence (10%) of smoking compared to other WHO regions (Atlas of African Health Statistics, 2022), it is expected to increase without the application of tobacco control measures. It is estimated that in the absence of tobacco control measures, there will be an increase in tobacco consumption by almost 39% by 2030 (Bilano et al., 2015; Blecher and Ross, 2013) including an increase in annual deaths and disability adjusted life years (Reitsma et al., 2021). Current data also show that North Africa and sub-Saharan Africa have continued to experience significant increase in the number

of tobacco smokers between 1990 and 2019 (Reitsma et al., 2021) due to population growth, thereby substantiating the projections by Blecher and Ross (2013).
Preventive measures highlighted in the WHO FCTC have therefore been proposed to stem the projected increase in tobacco use (Blecher and Ross, 2013; Wilson et al., 2018) to reduce out-of-pocket health expenditure, tobacco-related diseases and deaths, and pressure on health systems already battling with a double burden of disease.

Preventive measures utilizing a health communication approach have been recommended as a key component in tobacco control programmes for preventing tobacco use in low-and-middle income African countries (Mbulo et al., 2016; Munthali et al., 2021). Health communication has also been shown to address social norms, reduce tobacco use initiation and prevalent use among young people, counter beliefs that promote smoking as well as support tobacco control policies (CDC USA, 2018; Duke et al., 2018; Durkin et al., 2013; Huang et al., 2017; Wakefield et al., 2011).

While some authors have argued that the use of taxation is a primary and most effective tool for tobacco control (Bader, Boisclair, and Ferrence, 2011; Savedoff and Alwang, 2015); others have systematically assessed and argued for the need for campaigns (Atusingwize, Lewis, and Langley, 2014; Noar, 2006; Stead et al., 2019) as they have also been shown to be effective. The varied views on tobacco control measures have mostly been put to rest as the WHO FCTC has provided a framework that acknowledges the importance of various tobacco control measures operating simultaneously to effectively address tobacco use (See details on WHO FCTC measure in 1.2.1). The simultaneous implementation of varied tobacco control measures is vital, given the medical (Varghese and Muntode Gharde, 2023), social (Egbe et al., 2022; Philip et al., 2022), and economic implications (Goodchild, Nargis and Tursan d'Espaignet, 2017) of tobacco use.

1.1.1 Tobacco Control Approaches based on the WHO FCTC

Tobacco control encompasses a range of strategies aimed at reducing tobacco use and its associated health risks. Given that tobacco is a leading cause of preventable death worldwide, implementing effective control measures is critical. Different approaches, including policy interventions, behavioral strategies, and cessation support, work collectively to curb tobacco consumption and its impact on public health. These different approaches, are represented within the WHO FCTC to prevent the demand and supply of tobacco products (WHO FCTC, 2005).

Demand Reduction: Price and Tax Measures

These measures encompasses strategies to increase the price and tax of tobacco products to reduce the demand. These strategies involve implementing at country level a higher excise tax on tobacco products. This is supported using economic modellings and evaluations to project the cost-benefit and the financial implications of increasing product price and tax (Adeloye et al., 2019).

Demand Reduction: Non-Price Measures

These measures include strategies for:

- Protection from Exposure to Tobacco Smoke
- Regulation of the Contents of Tobacco Products
- Regulation of Tobacco Product Disclosures
- Transparent Packaging and Labeling of Tobacco Products
- Education, Communication, Training, and Public Awareness
- Preventing Tobacco Advertising, Promotion, and Sponsorship
- Promoting adoption of Measures on Tobacco Cessation

Supply Reduction Measures

These measures includes strategies to:

- Promote sustainable alternatives for tobacco farmers and protecting the environment from tobacco-related damage
- Prevent illicit trade in tobacco products and
- Prevent sales to and by minors

(WHO FCTC, 2005)

1.1.2 Background on Tobacco Control Approaches

While the WHO FCTC measures have been domesticated by 180 countries in the six WHO regions (Africa, Americas, Europe, South-East Asia, Eastern Mediterranean, and Western Pacific); these measures are not implemented consistently across the different countries. For instance, in high income countries like Australia, USA and UK, tax and price increase deter smoking initiation but does not significantly influence cessation (Bafuno et al., 2020). On the other hand, even though taxation has been identified as an effective tool for reducing tobacco use, it is underutilized in African countries due to tobacco industry interference and weak policy implementation (Egbe et al., 2022). The challenge of policy implementation is also experienced in similar or different forms. Some regions like Europe experience challenges mostly due to industry interference (Bafuno et al., 2020; Ibrahim and Glanz, 2007), while others like Africa suffer a combination of Industry interference, government resistance, politicking, conflict of interest, and lack of funding (Egbe et al., 2022; Oladepo et al., 2018; Udokanma et al., 2021).

The approach to implementing tobacco control measures depend on the country, group, and tobacco product. The Global Youth Tobacco Survey in the six regions of the World Health Organization reflects the varied level of challenges associated with tobacco control among young people. For instance, countries in the South East Asian regions like India, Timor and Bangladesh are mainly faced with challenges associated with the use of smokeless tobacco and cigarettes (Rani, Thamarangsi, and Agarwal, 2017; Satpathy, Jena and Epari, 2022) while countries like Nigeria and Ghana in the African region are dealing with challenges around smoked tobacco products like cigarettes and water pipe tobacco products like Shisha (Abraham, Egbe and Ayo-Yusuf, 2019; Kanmodi and Kanmodi, 2020; Logo et al., 2020); On the other hand, countries in the European region like Italy, Spain and England are battling the use of smoked tobacco products alongside emerging products like electronic cigarettes (Gallus et al., 2021; Njie et al., 2024; Tattan-Birch et al., 2024; WHO, 2024).

Despite the varied regional challenges, key tobacco control approaches recommended for young populations are often non-price measures. These approaches are often community-based (Suteerangkul et al., 2021; Biglan et al., 2000; Klein et al., 2009), use of mass media (Zucker et al., 2000; Farrelly et al., 2005; Sly et al., 2001) or school-based programmes (Andrews et al., 2014; Brown et al., 2019; Campbell et al., 2008; Vigna-Taglianti et al., 2021). The aforementioned approaches have mostly been implemented in high income countries. While some have taken a peer-led approach (Brown et al., 2019; Campbell et al., 2008), others have used mass media

(Zucker et al., 2000) and social media to reach young people given the proliferation of new tobacco products like electronic cigarettes (Stalgaitis et al., 2025).

For instance, in school-based interventions, Brown et al. (2019) implemented the TATU (Teen Against Tobacco Use) program, where trained teacher-coordinators selected peer messengers to deliver tobacco prevention messages, reducing resistance to teacher-led efforts. Student educators had flexibility in using training materials, though their presentations incorporated input from select students. In contrast, Campbell et al. (2008) used the ASSIST (A Stop Smoking in Schools Trial) model, where students voted for the most influential peers to act as "peer supporters," who then informally discussed smoking risks using their own language and approach. Both interventions had unintended positive effects; TATU educators participated in community tobacco control events (Brown et al., 2019), while ASSIST supporters spread messages beyond school to family and friends (Dobbie et al., 2019). In contrast, a study found that in many low-middle-income countries (LMICs), exposure to school-based tobacco prevention programmes remain inadequate (Chido-Amajuoyi et al., 2024). The authors highlighted that school-based tobacco control programs could facilitate a reduction in tobacco use among students and that it was crucial for national governments to integrate comprehensive school-based prevention initiatives into their broader tobacco control strategies.

Similarly, tobacco control campaigns have been found to be effective in reducing youth smoking prevalence, smoking initiation, and progression to established smoking (Allen et al., 2015; Carson et al., 2017; Duke et al., 2019; Niederdeppe et al., 2016). While tobacco control campaigns have also been shown to be cost-effective (Atusingwize et al., 2015; MacMonegle et al., 2018; Xu et al., 2015), notable campaigns focused on young people have mostly been conducted in high income countries (Stalgaitis et al., 2025; Zucker et al., 2000). Some campaign examples are; “Truth” (USA),” The Real Cost” (USA) and Stoptober (UK). The **Truth Campaign** in the U.S. utilizes youth-friendly messaging and social media to divulge tobacco industry tactics and the risks of smoking and vaping. **The Real Cost**, led by the U.S. Food & Drug Administration (FDA), delivers adverts that highlight the health dangers of smoking and vaping to young people. **Stoptober** in the UK encourages smokers, including young adults, to quit for twenty-eight days in October to increase their chances of quitting permanently. Notably, previous campaigns used mass media channels like television and billboards (Zucker et al., 2000) and focused on smoking (Duke et al., 2019; MacMonegle et al., 2018; Kuipers et al., 2017). Recently, the campaigns have

moved to also using digital channels and now focus on smoking and vaping, to remain relevant for young people (MacMonegle et al., 2022; Stalgaitis et al., 2025).

In Africa, mass media campaigns and preventing tobacco advertising, promotion and sponsorship are vital non-price measures (Munthali et al., 2021). These two strategies are important because both can be implemented singularly or in combination for effective tobacco control in Africa. The health communication interventions reported thus far in Africa and Nigeria are discussed at length in the scoping review and narrative review respectively (**See Chapter two**).

1.1.3 Tobacco Control Health Communication as an Approach

The foremost recommendations for tobacco control health communication were to continuously raise awareness through strong anti-tobacco media campaigns to counter the tobacco industry efforts, address knowledge gaps to discourage initiation and encourage quitting (CDC USA, 2012; National Cancer Institute, 2008). For Africa, Munthali et al. (2021) highlighted the effectiveness of mass media campaigns and advertising bans, while Mbulo et al. (2016) emphasized the need for working with the focal communities to develop culturally appropriate media messages that can bridge knowledge disparities and drive behaviour change. Both of which highlight the need for appropriate messages through mass media campaigns.

Previous studies in health communication for tobacco control in Africa have primarily focused on engaging adults and young people in adapting already designed mass media campaigns and materials (Karletsos et al., 2021; Perl et al., 2015). **These studies are discussed further in the scoping review in Chapter two**. A key reason for choosing adaptation was that it would cut down on scarce resources that would have been spent on development, which could be redirected to implementation and increase the reach and exposure to anti-tobacco content (Perl et al., 2015). This process of adaptation usually involves working with key stakeholders to re-fine already designed health communication materials for use in a country different from the country of production. On the other hand, studies outside Africa have focused on generating and evaluating anti-tobacco messages and campaigns with key groups (Cavallo et al., 2019; Farrelly et al., 2009, 2005; Sly et al., 2001). This is mostly carried out by using qualitative methods like focus group discussions to generate messages that are analyzed thematically to draw themes to inform health campaigns that are then evaluated with quantitative methods. Other studies also test the

messages on their target audience to quantify the effect of the message and the campaign (Montazeri and Mcewen, 1997; Odukoya et al., 2014; Perl et al., 2015; Wakefield et al., 2013).

Engaging young people in tobacco control health communication has the potential for encouraging them to take on a more active role in tobacco control. This potential for taking a more active role is exemplified in the 1998 Florida Truth Campaign. The Truth anti-tobacco mass media campaign relied on youth input in its development (Zucker et al., 2000). The campaign focused on communicating tobacco as addictive and the tactics of tobacco industry in promoting tobacco use. The campaign was evaluated as largely successful in reducing smoking rates among young people (Farrelly, 2005; 2009) who were previously unaware of the influence that the tobacco industry had on them. Similarly, the 2017 SKY Girls anti-tobacco Campaign in Ghana showed significant success by engaging young people in the implementation with some level of decision making. While the Truth campaign focused on young people in general, SKY Girls focused on young girls with the aim of empowering them to not follow the trend of smoking to look progressive. The SKY Girls campaign culminated in interpersonal interactions that facilitated a wider reach which contributed to the campaign's success (Hutchison et al., 2020; Karletsos et al., 2021). A catalyst in these successful campaigns was the active participation of young people. This body of work has helped to establish the importance of involving the focal population in the development of tobacco control health communication. The involvement of the focal population ensures that the campaign resonates with the target audience, is culturally and contextually relevant and facilitates a wider reach through mass media and interpersonal interactions.

1.2 Research Problem

Young people play an important role in achieving health for all (WHO, 2023). Their involvement in the process of decision making ensures that interventions are relevant and appropriate for them (WHO, 2021). The involvement of young people in health research also comes with benefits that are threefold; benefiting young people directly, the research project and their community (Wilson et al., 2020). These benefits culminate in improved health outcomes, increased knowledge and empowerment (Bailey et al., 2024; Wilson et al., 2020).

Young people participating in research that promotes their health, and wellbeing is important to ensure interventions are designed to produce better outcomes. This is even more important in tobacco control health communication given the lack of participation by young people in

intervention design and development (See details in the scoping and narrative review in chapter two). By 2050, one in every three births will be an African (UNFPA, 2017) and Nigeria will be a major contributor to the population projection. This growing population of young people will need targeted communication that is relevant to them to prevent the uptake of unhealthy habits like smoking.

Targeted communication requires the participation of the focal group to inform appropriate communication (Cavallo et al., 2019; Noar et al., 2018; Noar, 2006). While the involvement of young people as key decision makers in tobacco control health communication is not new in high income countries, like the United Kingdom and United States of America (Brown et al., 2019; Dobbie et al., 2019), this practice is still relatively new in African countries and in Nigeria.

Several factors position Nigeria as a key site for the involvement of young people in tobacco control health communication research:

1. Being the most populous black nation in Africa with over 229 million inhabitants and 42% below 15 years of age (UNFPA, 2023)
2. Increasing tobacco product experimentation by young people e.g. shisha (Abraham, Egbe and Ayo-Yusuf, 2019; Kanmodi and Kanmodi, 2020)
3. A leading tobacco hub in Africa, with over 18 billion cigarettes sold yearly (Adeloye et al., 2019)
4. High tobacco industry interference evidenced by deteriorating score index from 53 in 2021 to 60 in 2023 (ATCA, 2023) (**See more details on tobacco industry interference in the narrative review in Chapter two**)

There is an urgent need to ensure that young people are involved in tobacco control health communication, as their input would impact health outcomes. The input of young people is vital as the use of tobacco products often predicts the beginning of other risky behaviours including; violence, unprotected sex and use of alcohol (Bobo and Husten, 2000, Delgado-Lobete, 2020; Orlando et al., 2005; Vega and Gil, 2005). These risky behaviours preclude major health challenges like cancer and HIV/AIDS that will require significant resources for management which are not readily available in Nigeria's health system or free of charge (Abubakar et al., 2022). The report by the Centre for the Study of the Economies of Africa (CSEA) shows that over 28,800 annual deaths are attributed to smoking. The report also shows that smoking-related diseases

cost the Nigerian health system 634 billion naira of which 83% are towards smoking-attributable treatment costs (CSEA, 2021).

Also, Nigeria's Universal Health Coverage (UHC) Index is only 38 according to the most recent World Health Organization UHC data (WHO, 2021). This means that a large portion of the population does not have access to a significant range of essential healthcare services, highlighting a major gap in healthcare access and capacity in maternal, child, reproductive health, infectious diseases, and non-communicable diseases. Nigeria is also currently ranked 157 out of 167 countries for access to Universal Health Coverage (WHO, World Health Statistics 2024), further highlighting the urgent need for preventive measures to reduce the strain on an already struggling health system.

In addition, smoking by young people in Nigeria (and other African countries) come with negative social and cultural perceptions (Egbe et al., 2014; Kirk, 2019). In Nigeria, these negative perceptions could range from signaling poor morals to deviant behaviours (Egbe et al., 2014). These perceptions could limit young people from participating in public health promotion or even identifying as smokers. These perceptions could possibly also deter researchers from conducting qualitative studies with young people to avoid any form of stigma; thereby limiting their participation in research that could impact their lives. The health cost associated with smoking and challenges for the health system presents an urgent need to normalize the involvement of young people in tobacco control health communication research to ensure that interventions are relevant for them. Relevant interventions will facilitate the prevention of non-communicable diseases and ultimately relieve the strain on the health system.

While it is unlikely that a single message would end tobacco smoking for current or addicted smokers, the use of targeted messages generated from and by the target audience can prove worthwhile in reducing smoking initiation (Cavallo et al., 2019; Roditis et al., 2020), instigating the use of cessation services (Liao et al., 2016), and aiding better smoke-free policies (Riker et al., 2015). Targeted health communication can serve as a tool to address knowledge gaps affecting the health and wellbeing of young Nigerians; empower them to make appropriate health decisions and influence lifestyle choices that will eventually impact their health over time.

The lack of participation by young Nigerians in informing targeted health communication in tobacco control is addressed in this thesis. This lack of participation is addressed by adopting a participatory approach to qualitatively involve young people in determining and designing communication that specifically focuses on them.

1.3 Positionality: My Story in Nigeria's Tobacco Control Health Communication Approach

My journey as a tobacco control advocate started in 2017 when I participated in the Tobacco Free Nigeria Competition (See Appendix 1). The competition aimed to create awareness about the Nigeria Tobacco Control Act (NTC) of 2015. I was a postgraduate student at the University of Ibadan in the department of Health Promotion and Education. Being a postgraduate student, enabled me to become better aware of the need to engage key groups in health promotion. I decided to involve school communities (students and teachers) as my way of involving young people and creating awareness on the harms of smoking. I choose the school community because they play an important role in shaping the health and wellbeing of young people early in life. This led to my starting the Anti-Tobacco School Art Challenge and consequently being awarded one of the winners of the WHO World No Tobacco Day Award in 2018 in the African Region (See Appendix 2). Recently, I and my team (Health Promotion Education & Community Development Initiative- HPECDI) were featured in a documentary by the Campaign for Tobacco Free Kids (Africa Region). The documentary highlighted Nigeria's tobacco control story, which featured young men and women taking bold steps to create awareness and becoming advocates (See Appendix 3).

My health promotion background coupled with the goal to fill the gap in active participation by young people, informed my theoretical and philosophical perspective for this thesis. I approached this thesis from the position of a health promoter and a researcher who understood the Nigerian context of smoking among young people. As a health promoter working with schools to prevent smoking, I was better positioned than other researchers to navigate the school community based on trust previously built. Also, as a health promoter, I am genuinely interested in ensuring that the voices of young people are included in interventions that will impact their lives. As a researcher working in the tobacco control space, I understood the place and power of authentic data. Positioning as a researcher gave room for me to work with young people and produce data that would be strongly considered for health promotion in tobacco control.

My background as a health promoter and researcher in Nigeria strongly influenced my disposition towards health promotion theories that transversed the various layers of social life. This also influenced my choice for using a socio-ecological lens and a constructivist approach; which would ensure that the data produced from the thesis clearly represented the views of my participants but also the context of the study at various levels of interaction that are vital for young people.

1.4 Research Aims and Objectives

The aim of this thesis is to determine and design targeted health communications for tobacco prevention among young people in Nigeria, by utilizing a co-design approach within the school setting.

To achieve this aim, the following objectives were identified:

1. To explore how young people can be involved in participatory processes to inform health communication campaigns
2. To highlight and examine the characteristics of messages that are generated by young people for tobacco control health communication in a participatory process
3. To examine how the use of a participatory process can inform the development of tobacco control health communication interventions in Nigeria

1.5 Overview of Methodology

This thesis adopting a participatory approach, namely co-design. The co-design process involved a series of interconnected workshops that aligned with the phases of co-design: discovery, idea generation, ideation and feedback. **The four co-design phases are detailed in Chapter three**. Each phase was addressed with the use of creative methods (structured drawing, writing activities, and diaries) for data gathering to facilitate active participation in decision making, and knowledge sharing, while allowing for group discussion and reflection. The research took place among young people in two senior secondary schools (one public and one private) that were located within walking distance of tobacco sales outlets in a community with several hotspots for smoking. Eighty-nine participants aged 13 – 19 years volunteered to participate. Participants were subdivided into seven teams to facilitate working together in eight consecutive workshops. The data gathered was analyzed thematically as the workshops progressed.

1.6 Relevance of Study

The current low prevalence of smoking in Africa is expected to change over time without preventive measures like health communication. This is because health communication has been shown to not only prevent smoking initiation among young people but to also propel attempts to quit.

Research focused on determining and designing tobacco control health communication informed by young people for young people in a participatory process is conspicuously lacking in Africa and Nigeria. This thesis argues that actively engaging young people in tobacco control health communication will help to shape the landscape of health communication in Nigeria. In shaping the landscape of health communication, a clear path for young people to be more involved in setting the agenda, and trajectory for tobacco control will be established. This will in turn facilitate better, targeted anti-tobacco messages and campaigns that are relevant to the needs of young people and can ultimately impact health outcomes.

1.7 Structure of Thesis

This thesis comprises of nine chapters that detail the background, literature review, methodology, results and discussion from engaging a participatory approach. This current chapter (Chapter 1) gives an introduction to the research problem and the objectives.

Chapter 2 provides a scoping review on tobacco control health communication in Africa using studies that engaged some form (text, visual) of communication, application of tobacco control policy with focus on health communication and WHO FCTC Article 12. The chapter also provides a narrative review on tobacco control campaigns conducted in Nigeria between years 2010 and 2024 and highlights the lack of active involvement of young people in tobacco control health communication in Nigeria. This chapter highlights the health promotion theoretical framework (Socio-ecological Model) and the philosophical orientation (Constructivism) used to guide this thesis. Chapter 2 also features review on the involvement of young people in research, key participatory models in researching with young people and vital methods such as creative methods that are applied in such studies.

Chapter 3 provides the methodological framework for this study. The chapter features participatory research, co-design and its key phases, including the study setting, process of recruitment and application of creative methods within the four phase of a co-design process using workshops.

Chapters 4 to 7 focus on sequentially reporting and analyzing data from the eight consecutive co-design workshops in the two participating schools. Chapter 4 provides results for the first co-design workshop (Discovery). Chapter 5 highlights the result from the second workshop (Idea

generation). Chapters 6 and 7 address results from the third and fourth workshops respectively (Ideation and feedback) using data from structured drawings and writing, discussions, and diaries.

Chapter 8 provides a discussion of the thesis in four sections. (1) Discusses co-design as a methodological approach in participatory research with young people in the context of Nigeria and tobacco use prevention. (2) Discusses the characteristics of messages and the types of messages prioritized by young people for tobacco control health communication in Nigeria. (3) Discusses how co-design can inform a new approach to intervention development for tobacco control health communication in Nigeria. (4) Discusses a reflective piece on key learnings from conducting a co-design study with young people from the perspective of a Nigerian health promoter and researcher.

Chapter 9 provides a summary and recommendations for future research based on the key findings from the thesis.

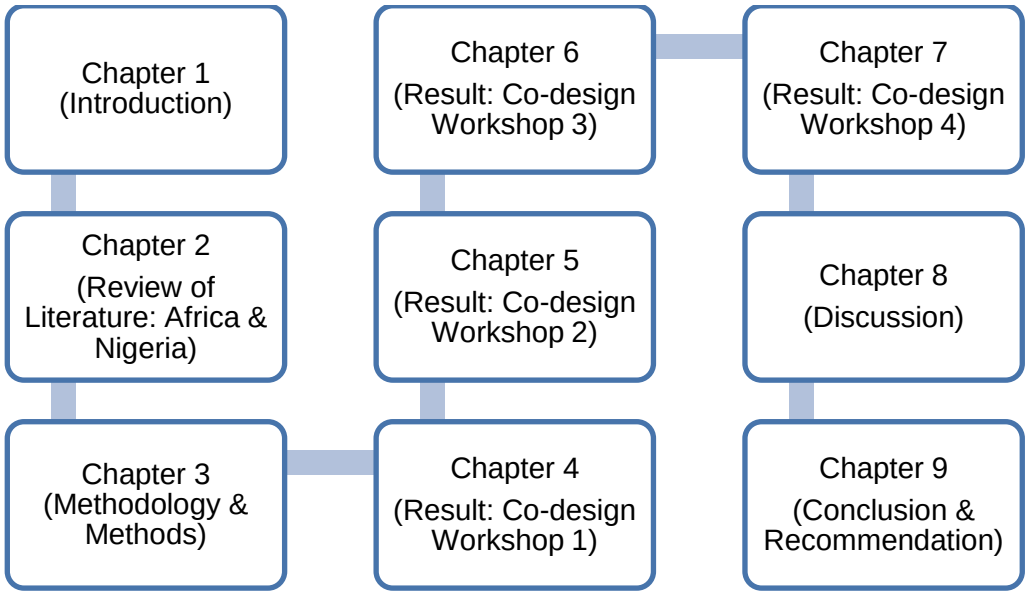


Figure 1: Thesis Structure Flow Chart

1.8 Chapter Summary

In this chapter the background of the study was discussed alongside the problem statement and objectives as well as relevance and organization of the study. In the next chapter, the study will establish the justification for the research approach and the methods selected for the literature review. Here, more emphasis is placed on search strategy, studies focused on young people, tobacco control and health communication in Africa and Nigeria. Finally, the study discusses the findings that emerged from the scoping and narrative reviews conducted

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Health communication has varied definitions and focus that make it difficult to fully address. This is because different studies will employ diverse approaches that are suitable for their research focus and target group. Health communication is generally seen as a blend of science and art aimed at improving the health and well-being of populations through effective communication strategies (Society for Health Communication SHC, 2017). This blend of two worlds facilitates the fluid nature of health communication and makes it possible to adopt varied approaches and theories based on the population and context of the study. The flexible nature also makes it possible for health communication to be multidisciplinary, interdisciplinary, or transdisciplinary (Croucher, 2015); with different fields and families of theories (Schiavo, 2014).

As a field of inquiry, health communication can draw from both communication and non-communication disciplines to facilitate studying the influence of communication on health (Croucher, 2015). Due to the flexible nature of health communication, there are varied theoretical inclinations and different types of health communincation. The theoretical inclinations could focus on communication, education, and psychology theories (Cross, Davis and O'Neil, 2017), or social marketing, sociology, medical, or behavioural and social science theories (Schiavo, 2014); while the different types could be mass media, interpersonal, or medical communication (Schiavo, 2014). Health communication could also take varied approaches from the social scientific to interpretive or critical (Croucher, 2015). Despite the varied theoretical inclinations and types, health communication is still characterized by a basic model of the communication process. The basic model process of communication has a message sender, the message, a receiver (audience) who receives the message via a communication channel, and a feedback loop; all of which are the components within the communication process (Cross, Davis and O'Neil, 2017 p.18; Cross et al., 2013).

Health communication could be directed at informing and influencing the decisions of individuals and communities; motivating individuals and key groups; changing behaviour to achieve social and behavioural results; increasing knowledge and understanding of health-related issues;

empowering people; engaging people or exchanging information in a two-way dialogue (Schiavo, 2014).

To provide clarity for this thesis, health communication would be considered from the perspective of promoting the health and well-being of young people in Nigeria to prevent tobacco smoking. This perspective would help to clarify the theoretical, practical and cultural considerations in this thesis.

To streamline the approach for the scoping review and focus on young people while addressing the length and breadth within the context of tobacco control, this thesis adopted the broad definition of health communication by Schiavo (2014). According to Schiavo (2014 p.9), Health communication involves guiding, assisting, and empowering individuals, communities, healthcare providers, policymakers, and specific groups to embrace and maintain behaviours or changes in society, organizations, and policies that enhance individual, community, and public health outcomes. The broad definition by Schiavo was used in the scoping review to strategically review all available literature and highlight the gaps in tobacco control health communication.

This chapter begins with a scoping review guided by the PRISMA Extension for Scoping Reviews (PRISMA-ScR) Checklist (Tricco et al., 2018) to identify gaps in tobacco control health communication in Africa. The scoping review is focused on Africa with young people (10 - 24 years) as the focal group. The scoping review has been published in the International Journal of Environmental Research and Public Health (IJERPH) special issue on Tobacco Control: Challenges, Policies and Interventions (See Appendix 4).

The literature review chapter also includes a narrative review of the tobacco control health communication landscape in Nigeria, focusing on the policy, people, and structures that have influenced health communication. The narrative review is aimed at narrowing down the focus from Africa to a Nigerian perspective to further guide the study design and approach given the complex nature of health communication.

The narrative review sheds further light on the mass media campaigns that have been reported for Nigeria in the WHO Global Health Observatory (See Appendix 5 & 6). The review takes a thematic approach to articulate key aspects of tobacco control health communication and sequentially report the campaigns conducted in Nigeria. It highlights the strong involvement of non-governmental organisations (NGOs) in Nigeria's tobacco control history but also the passive involvement of young people in intervention design.

Both reviews demonstrate the need for the methodological approach to this study, and lays the foundation for the focus on tobacco control health communication among young people as a key population in Africa and Nigeria.

SCOPING REVIEW OF TOBACCO CONTROL HEALTH COMMUNICATION IN AFRICA: MOVING TOWARDS INVOLVING YOUNG PEOPLE

THIS SCOPING REVIEW HAS BEEN PUBLISHED

Aienobe-Asekharen, C., Norris, E. and Martin, W. (2024). A Scoping Review of Tobacco Control Health Communication in Africa: Moving towards Involving Young People. *International Journal of Environmental Research and Public Health*, 21(3), p.259. https://doi.org/10.3390/ijerph21030259

Author Contributions

Conceptualization, C.A.-A., E.N. and W.M.; methodology, C.A.-A. and E.N.; investigation, C.A.-A.; data curation, C.A.-A.; writing—original draft preparation, C.A.-A.; writing—review & editing, C.A.-A., E.N. and W.M.; supervision, E.N. and W.M.

Abstract

Health communication has been highlighted as a cost-effective preventive intervention in Africa, where prevalence of tobacco use is still relatively low compared to other World Health Organization (WHO) regions. This scoping review aimed to examine tobacco control health communication interventions in Africa.

The scoping review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) checklist. The PRISMA-ScR checklist is a twenty-two-item list containing twenty essential reporting items and two optional items to be included when completing a scoping review (See Appendix 2). Data was extracted from twenty peer-reviewed papers, WHO Global Health Observatory on Anti-tobacco mass media campaigns for fifty-four African countries, and six WHO Framework Convention on Tobacco Control reports on Article 12. Data extraction informed by Joanna Briggs Institute (JBI) data extraction questions was used for peer-reviewed studies while a pre-determined template was used for the other sources. Narrative data synthesis informed by the JBI manual for evidence synthesis was also employed.

A lack of research that comprehensively addresses all areas of health communication and inconsistent use of health communication campaigns was identified. Only an average of six countries had ever implemented high-quality mass media campaigns in a decade (2010 to 2020), while an average of 33 countries consistently failed to conduct campaigns that lasted more than three weeks. Although the involvement of key populations was vital to ensure content relevance and message clarity; a lack of health communication informed by young people was observed, as they rarely participated in key decision-making despite reportedly being targets of interventions. Most studies also adopted a quantitative approach.

Clear health communication for tobacco use prevention informed by young people is lacking in African countries. Active participation of young people in developing targeted campaigns is needed to facilitate content relevance and comprehension to ultimately contribute to tobacco use prevention.

2.1 Background

The deaths of over eight million people annually are attributed to tobacco use (World Health Organization, 2023). The burden of tobacco-related deaths and ailments is highest among people living in low- and middle-income countries where 80% of the world's 1.3 billion tobacco users reside (World Health Organization, 2023). Africa has been predicted as the continent that will have the highest increase in smoking prevalence without preventive measures being engaged (Bilano et al., 2015; Blecher and Ross, 2013; Mendez, Alshanqeety, and Warner, 2013). It is estimated that in the absence of tobacco control measures, there will be an increase in tobacco consumption by almost 39% by 2030 (Blecher and Ross, 2013; Mendez, Alshanqeety and Warner, 2013). This is estimated to be the highest expected regional increase globally (Blecher and Ross, 2013).
According to the 2022 Atlas of African Health Statistics by the WHO Regional Office for Africa (WHO, 2022), the African region has a lower prevalence of smoking at 10%, in contrast to higher rates of 16% in the Americas and 29% in South-East Asia. Given Africa's projected population boom (Reitsma et al., 2019; United Nations Children's Fund, 2012), and a rapid increase in tobacco use (Blecher and Ross, 2013), health communication as a cost-effective preventive approach is recommended as one of the best buys (WHO, 2017; 2023).

Health communication is both a science and an art that seeks to advance the health and well-being of populations through communication (Society for Health Communication, 2017). Due to the

multidisciplinary nature of health communication, there are several definitions and overlaps (Schiavo, 2014, p.6-8). The majority of definitions point to the role of health communication in influencing, supporting, and empowering individuals, communities, healthcare professionals, policymakers, or special groups, to adopt and sustain a behaviour or a social, organizational, and policy change. This change will ultimately improve individual, community, and public health outcomes (Schiavo, 2014, p.9). To empower populations to make the best decisions to achieve the best outcomes, health communication is often practiced in active collaboration with the focal population (Schiavo, 2014, p.10).

Health communication interventions have been shown to address social norms, prevent smoking initiation, encourage quit attempts, and support policy (CDC USA, 2018; WHO, 2017). These interventions are aimed at improving knowledge, addressing perceptions, and changing behaviour (CDC USA, 2018). The interventions are also aimed at ensuring information is effectively communicated at a level that people can understand, while engaging them in the decision-making process (Bell and Condren, 2016). This approach is vital as targeted communication informed by the focal group is valuable, as it enhances the impact of health information, and increases relevance (Cavallo et al., 2019; Kreuter and Wray, 2003). Health communication campaigns have been identified as economical, effective in preventing youth initiation and reducing tobacco use (CDC USA, 2018; Durkin et al., 2012; WHO, 2017) and vital in the de-normalisation of the tobacco industry, and de-glamourisation of tobacco use (Malone, Grundy and Bero, 2012).

The Florida anti-tobacco truth campaign that specifically targeted young people was reported as largely successful (Farrelley et al., 2009; 2005). The campaign comprised consistent and focused advertisements (two to three on TV), which gave young people a sense of empowerment and projected that young people themselves needed to take action to put a stop to the tactic employed by the tobacco companies. The message was also clearly visualized - tobacco use can cause death, and the tobacco industry is manipulative and needs to be stopped. In Africa, the 2017 SKY Girls campaign in Ghana also recorded success as they engaged young people in the implementation phase using mass media and social media channels to de-glamourise tobacco use and to promote a positive sense of identity not defined by smoking (Hutchison et al., 2020; Karletsos et al., 2021).

While tobacco control health communication through the media is predicted to be the future battlefield for supremacy on tobacco narratives (Egbe et al., 2022), tobacco control has not

enjoyed media coverage even though the media are uniquely placed to influence the public health agenda and public opinion (McDaniel, Cadman and Malone, 2018).

In Africa, the utilization of health communication as a tool for preventing smoking is still in its formative years and is fraught with several challenges. This is because there are limited studies that address the six different areas of health communication as highlighted by Schiavo (2014, p.26–28), including limited research that specifically targets the tobacco control health communication needs of young people aged 10–24 years as defined by the WHO (2024). In addition, tobacco-control policy implementation is not homogenous across regions and could be impaired due to poor funding, poor policy enforcement, lack of government commitment, limited capacity for enforcement, tobacco industry interference, or the presence of cross-border marketing activities (Anderson, Becher and Winkler, 2016; Wisdom et al., 2018).

The need for a robust approach to tobacco-control health communication in Africa is more relevant now than ever. This is because the prevalence of tobacco smoking, though still low, will increase (Blecher and Ross, 2013; Gilmore ta al., 2015) as the continent moves from being a tobacco production hub to a tobacco consumption center (Blecher and Ross, 2013; Oyewole, Animashaun and Chapman, 2018).

The growing population in Africa is expected to significantly increase by 2050 as one in every three births will be in Africa (United Nations Children Fund, 2012). This projected population increase will necessitate interventions that are specifically targeted at young people. These targeted interventions would facilitate a reduction in tobacco-related diseases and deaths, and reduce out-of-pocket health expenditures, including contributing to the achievement of Sustainable Development Goal 3, specifically, targets 3.4 and 3.a (WHO, 2022).

This review aims to highlight what has been implemented around tobacco control health communication within Africa with a particular focus on the involvement of young people by taking a scoping review approach to better facilitate a balanced view. A scoping review is necessary because tobacco control health communication in Africa is still in its infancy, with limited peer-reviewed literature. As such, utilizing grey literature and the appropriate supporting policy (WHO FCTC Article 12) will enable a more holistic framing of the present reality to inform future interventions.

The objective of this review is to:

A. Identity the types of tobacco control health communication interventions in Africa.

B. Identify how young people are being involved in tobacco control health communication.

2.2 Method

2.2.1. Data Sources and Identification

This review was guided by the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews – See Appendix 7) checklist; a protocol was not registered, and critical appraisal was not conducted on identified papers. This was because the review aimed to identify and map all available evidence on tobacco control health communication in Africa, and to examine how young people were involved.

Five databases (PsychInfo, PubMed, African Journals Online, Web of Science, and WHO Global Health Observatory on anti-tobacco mass-media campaigns) and six WHO FCTC Global Progress Reports were identified as sources of information. The databases recurring consistently across systematic reviews on tobacco control in Africa were identified for the literature search (PsychInfo, PubMed, and African Journals Online) while an additional search was conducted in Web of Science.

For the grey sources, the WHO Global Health Observatory on anti-tobacco mass-media campaigns (WHO GHO ATMCs) were identified and traced from key papers that referred to the WHO FCTC and MPOWER strategy (Anderson, Becher and Winkler, 2016; Egbe et al., 2022; Mendez, Alshanqeety and Warner, 2013; Wisdom et al., 2018). The WHO FCTC Global Progress Report on Article 12 was also identified from papers that referred to the pivotal role of the WHO FCTC in facilitating tobacco control (Anderson, Becher and Winkler, 2016; Egbe et al., 2022; Gilmore et al., 2015; Wisdom et al., 2018). All data sources in this review were accessed between 4 January 2021 and 17 November 2023.

No time restriction was applied during the database search. Search terms used include Health AND (Message OR Campaign OR Communication) AND (Nicotine OR Tobacco) AND Africa, Health AND (Message OR Campaign OR Communication OR Awareness OR Training) AND (Nicotine OR Tobacco) AND Africa. The highlighted search string was further used specifically for each of the identified 54 countries in the WHO Global Health Observatory database to ensure key papers were not missed. A summary of the sources is highlighted in Figure 1.

2.3 Eligibility Criteria

Studies were assessed as eligible if they focused on any of the six areas of health communication as acknowledged by Schiavo (2014, p.26-28), and/or focused on health communication as highlighted in the WHO FCTC Article 12 (WHO FCTC, 2013), was conducted among Individuals living in Africa not Africans in Diaspora, and were targeted at young people 10 – 24 years.

The classification offered by Schiavo covers varied aspects of health communication. This structure for classification was selected as it offers a clear yet broad perspective on the different areas of health communication. The six areas of health communication are:

1. Interpersonal communication
2. Mass media and new media communication
3. Community mobilization and citizen engagement
4. Professional medical communications
5. Constituency relations and strategic partnerships in health communication
6. Policy communication and public advocacy

Studies were included if they were conducted among individuals living in Africa, not Africans in the diaspora, and were targeted at young people 10–24 years old. The included studies also had full-text available, were written in the English language, and did not combine tobacco and other substances like cannabis and alcohol. Studies that focused on forms of health communication not (yet) attached to a tobacco product were also a primary focus, as these would provide insight into the involvement of participants.

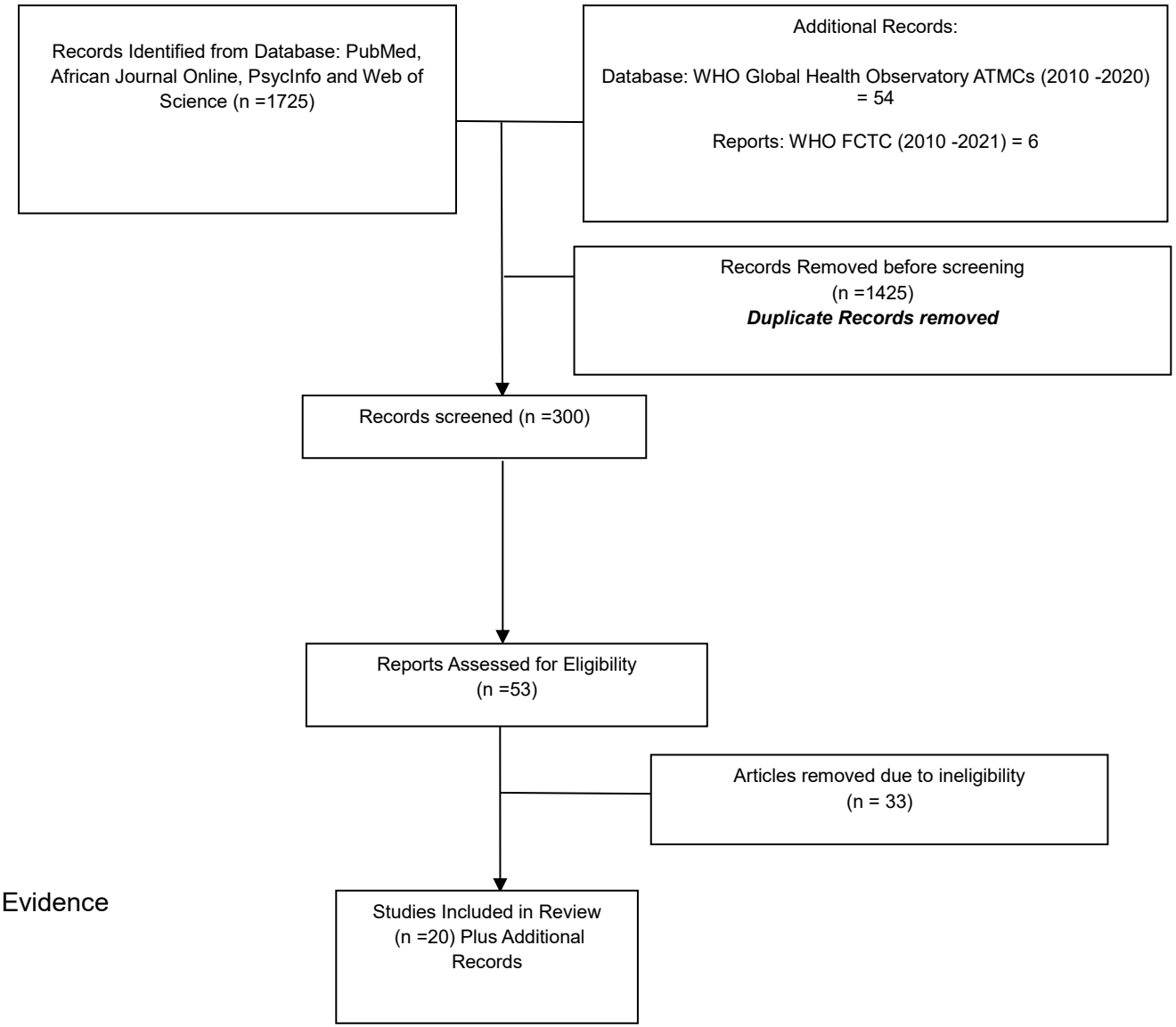


Figure 2: Sources of Evidence

2.4 Search Approach and Characteristics of Sources

Guided by the six areas of health communication and the WHO FCTC in the eligibility criteria, studies were identified from a literature search and included in the review. Health communication interventions reported in the WHO Global Health Observatory and the WHO FCTC Article 12 Reports were also accessed online as highlighted below:

A. Database: The WHO GHO ATMCs data for 54 African countries from 2010 – 2020

The WHO Global Health Observatory (GHO) is an online database hosting data segmented into thirty-three themes (WHO GHO, 2019). Within the tobacco control theme, there are eight sub-themes, one of which is - Anti-tobacco mass media campaigns. In the WHO GHO, anti-tobacco mass media campaigns are classified per country data into five categories based on the seven characteristics (CTS) of a high-quality campaign. These categories and characteristics have been highlighted below in Table 1. The number of characteristics identified in a county's campaign is used to identify the category under which the campaign will be rated. More details on the data per country can be found in Appendix 5 or obtained directly from the WHO GHO website.

Table 1: WHO GHO Anti-tobacco mass media campaign categories

WHO GHO Category
5 = National Campaign with ≥7 CTS (Plus TV/Radio)
4 = National Campaign with ≤7 CTS (No TV/Radio)
3 = National Campaign with ≤4 CTS
2 = No National Campaign ≥ 3 Weeks
1 = No Data Reported
CTS = Characteristics The characteristics (CTS) of a high-quality campaign as enumerated by the WHO include: 1. The campaign is part of a tobacco control programme 2. Formative research to understand the target audience 3. Campaign materials are pretested with the target audience and refined in line with campaign objectives 4. Airtime (radio, television) and/or placement (billboards, print advertising, etc.) is obtained 5. Collaboration with journalists to gain publicity or news coverage 6. Process evaluation to assess how effectively the campaign had been implemented; and 7. Outcome evaluation to assess the campaign impact

B. Reports: Six reports from the WHO FCTC Global Progress Report focused on Article 12 from 2010 – 2021

The WHO Global Progress Report is a biennial report from the WHO FCTC parties collated by the WHO. Each party also referred to as a country that has ratified the WHO FCTC is provided with a reporting instrument. This instrument is used to report their progress on the implementation of the WHO FCTC articles (WHO FCTC, 2022). A single reporting instrument was adopted in November 2010 to facilitate country reports. The reporting instrument is segmented into core mandatory questions and additional voluntary questions on the use of the FCTC implementation guidelines. More details on the reporting instrument can be found on the WHO FCTC website.

2.5 Data Charting Process and Items

Information was extracted from twenty peer-reviewed papers using a developed data extraction template informed by the Joanna Briggs Institute (JBI) guide for data extraction in scoping reviews (JBI, 2022; Pollock et al., 2023). The data extraction questions covered key areas such as; author(s), year of publication, aim of study, settings, study population, study design, area/type of health communication intervention, and involvement of young people in the intervention design. The extracted data items were recorded on a table in Microsoft word document and saved on the personal computer of the first author. A summary of the extracted data is highlighted in Table 3.

A pre-determined extraction template was used to extract relevant data from the WHO GHO database on Anti-tobacco Mass media Campaigns (ATMCs) and the WHO FCTC Article 12 Reports.

A. WHO Global Health Observatory database: The data extraction items covered include; African country, World Bank Income group of African Countries, Number of Campaigns Recorded (2010 – 2020), WHO ATMCs Category, Review Score and Overall Review Score. A summary of the extracted data is highlighted in figure 3 while the full list for 54 countries is in Appendix 5.
B. WHO FCTC Article 12 Reports: Number of Parties (Countries) that applied Article 12, Year of WHO FCTC Report, Average % Implementation Rate of Article 12, % of Parties Focused on Health Risk of Tobacco Consumption, % of Parties Targeting Children, Stakeholders Involved in implementation of Programmes, and African Country mentioned in Year of Report. A summary of the extracted data is highlighted in Appendix 6.

2.6 Data Synthesis

Narrative data synthesis, informed by the Joanna Briggs Institute (JBI) manual for evidence synthesis (JBI, 2022; Pollock et al., 2023) was conducted to comprehensively describe the methods, and findings of the included studies. The types of health communication interventions and the target population of those interventions were compared across the data sources to identify common themes in tobacco control health communication in Africa. Also, the studies were compared to explore whether young people were involved in the process.

3.0 Results

A total of 1725 studies were identified in the database search. After duplicates were removed, 300 articles were screened. After the final review, 20 peer-reviewed studies were included. For the grey sources, data from 54 African countries were included along with information from six WHO FCTC Reports.

3.1 Study Characteristics

3.1.1 Peer-Reviewed Sources

Most studies focused on a descriptive account of mass media campaigns and the use of Health Warning Labels (HWLs). The studies that focused on mass media campaigns using either traditional media or social media were twelve. These studies were conducted across eighteen African countries including: Senegal, Nigeria, Kenya, Ghana, Burkina Faso, Ethiopia, Liberia, Lesotho, Malawi, Swaziland, Uganda, Zambia, Zimbabwe, Egypt, Ethiopia, Mauritius, Tunisia and Somaliland. Among the aforementioned twelve studies, two made use of a mixed methods design (Perl et al., 2015; Wakefield et al., 2013); five examined secondary data from national sources that applied a cross-sectional design (Achia, 2015; Azagba et al., 2015; Bekalu et al., 2022; Owusu et al., 2017; Siziya et al., 2008); three made use of single and multiple cross-sectional surveys (Oyapero et al., 2021; Karlestos et al., 2021; Khalbous and Bouslama, 2012); while two made use of quasi-experimental designs (Hutchinson et al., 2020; Odukoya et al., 2014).

The studies that focused on health warning labels (HWLs) were six. These studies were conducted across four African countries including; Tunisia, Egypt, Ghana, and Nigeria. Among the studies, one made use of mixed methods design (Mansour et al., 2023); four made use of

single and multiple cross-sectional surveys (Adebiyi et al., 2016; Borzekowski et al., 2014; Mostafa et al., 2018; Mostafa et al., 2021); while one made use of a qualitative design (Singh et al., 2014).

Two studies that focused on professional medical communications (Odukoya et al., 2020) and constituency relations (Uchendu et al., 2018) were both conducted in Nigeria and made use of pre-post study design and cross-sectional design, respectively.

In total, seventeen studies had a preventive focus while three studies had a cessation goal (Odukoya et al., 2020; Owusu et al., 2017; Wakefield et al., 2013). The aforementioned three studies aimed at using health communication interventions like text messages and television advertisements, to propel medical personnel to engage in cessation treatment and to examine quit attempts. A summary of the peer-reviewed sources is shown in Table 3.

3.1.2 Grey Sources

Between 2010 and 2020, the WHO GHO recorded anti-tobacco mass media campaigns for fifty-four African countries (WHO GHO, 2020).

In 2020, amongst the 54 countries recorded, only 9 conducted a campaign that was considered effective by the WHO based on the set criteria (See Table 1). In the same year, 35 countries could not conduct a campaign that lasted for more than 3 weeks. The WHO GHO ATMCs records show that most African countries have consistently been unable to conduct campaigns that lasted for more than 3 weeks. In this review, each country was awarded scores based on the category and quality of the recorded campaigns, with countries scoring seven and above highlighted (see Appendix 5). These countries include Cote d'Ivoire, Egypt, Ethiopia, Ghana, Mauritius, Morocco, Rwanda, Seychelles, Togo, and Tunisia. Tunisia had the highest score (14), with three campaigns of high quality (3 × 3= Best), two campaigns of medium quality (2 × 2 = Better), and one campaign of low quality (1 × 1 = Good). Although over the years, countries like Tunisia, Togo, Seychelles, and Ghana have recorded at least three campaigns that applied ≥7 (plus TV/Radio) of the characteristics; the majority of African countries have not been consistent in engaging effective mass media campaigns as a health communication approach.

Also, between 2010 and 2021, the average implementation rate of the WHO FCTC Article 12 among countries that have ratified it went from 70% to 92% but only seven African countries were mentioned cumulatively in the six reports. This further substantiates the records in the WHO GHO

showing that African countries are not maximizing anti-tobacco campaigns and are not significantly impacting the high implementation rate of the WHO FCTC Article 12.

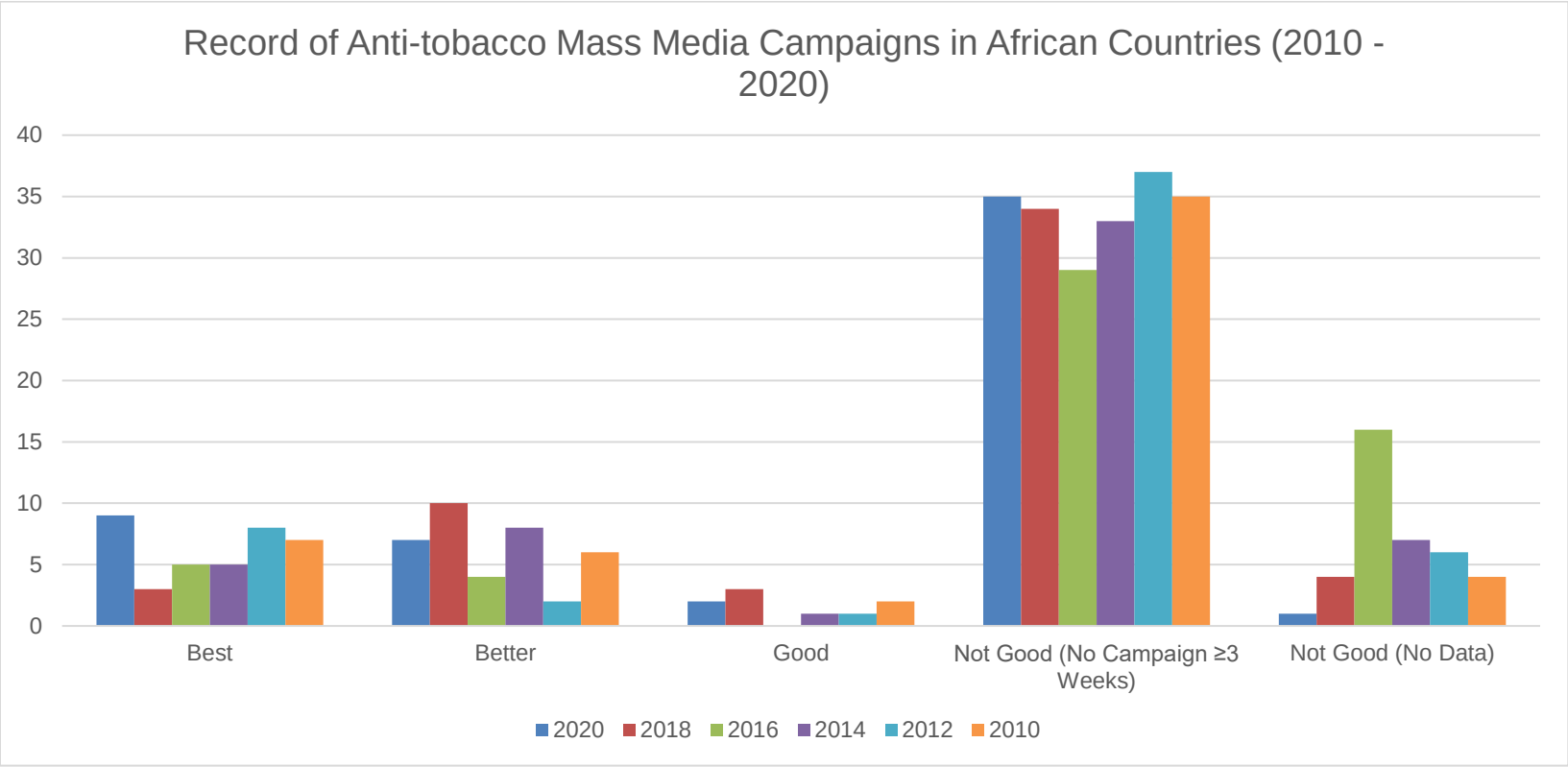


Figure 3. Record highlighting the number of African countries conducting high-quality campaigns.

Table 2. Record of the average number of African countries conducting high-quality campaigns.

Number of African Countries						Total Number
Year of Campaign Recorded	**Best (3) National Campaign with ≥7 CTS (Plus TV/Radio)**	**Better (2) National Campaign with ≤7 CTS (No TV/Radio)**	**Good (1) National Campaign with ≤4 CTS**	**Not Good (0) No National Campaign ≥ 3 Weeks**	**Not Good (0) No Data Reported**	
2010	7	6	2	35	4	54
2012	8	2	1	37	6	54
2014	5	8	1	33	7	54
2016	5	4	0	29	16	54
2018	3	10	3	34	4	54
2020	9	7	2	35	1	54
Average	**6**	**6**	**1**	**33**	**6**	

Table highlighting the average number of countries that have conducted high-quality campaigns between 2010–2020.

Table 3: Characteristics of Sources and Citation

Author/Year	Setting	Area/Type Of Health Communication Addressed	Aim of Study	Study Design/Method	Population (Age/N Size)	Involvement of Young People in Intervention Design
Achia (2015)	Burkina Faso, Ethiopia, Liberia, Lesotho, Malawi, Swaziland, Uganda, Zambia and Zimbabwe	Mass Media Campaigns Television, Radio, newspapers or magazines	Study the relationship between self-reported tobacco use and frequency of mass media utilization in nine LMICs in Sub-Saharan Africa	Quantitative Cross-sectional design using Secondary Data Analysis from DHS	159,462 Women aged 15–49 years (n = 101,316) & Men aged 15–59 years (n = 58,146)	N/A
Adebiyi et al. (2016)	Igbo-Ora, Nigeria	Media Graphic Health Warnings	To examine if the use of graphic health warnings can be effective in preventing smoking initiation among young people in Nigeria	Quantitative Cross-sectional study	(554) students aged 13–17years	Not Involved in Design
Azagba et al.(2015)	Mauritius	Mass media Campaign (sponge) Television Advertisements	Examine the combined effect of an increase in cigarette excise tax and an anti-tobacco mass media campaign (sponge) on smoking behaviour.	Quantitative – Longitudinal Study International Tobacco Control Mauritius Survey, 2009 – 2011 using Secondary longitudinal data analysis	725 Respondents Adults Smokers and Non-Smokers (aged ≥18 years)	N/A

Bekalu et al. (2022)	Ethiopia	Mass Media Television, radio, billboards, posters, newspapers, magazines, movies	Examine if tobacco risk perceptions varied across socioeconomic and urban vs. rural population subgroups, and whether and how exposure to anti-smoking messages was associated with disparities in risk perceptions across socioeconomic and urban-rural subgroups	Quantitative Cross-sectional survey using secondary data analysis from GATS Ethiopia 2016	10,150 Male/Female 15 years and above	N/A
Borzekowski & Cohen (2014)	Brazil, China, India, Nigeria, Pakistan, and Russia	Media Text/Image Health Warning Labels (HWLs)	Investigate the awareness and understanding of health warning labels among 5- and 6-year-old children in six countries	Quantitative Survey	2423 5 - 6-Year-old	Not Involved in Design
Hutchinson et al. (2020)	Ghana	Mass Media Magazine, movies, radio programs, social media and other promotional activities.	Impact evaluation of SKY Girls, a youth-focused smoking prevention and empowerment campaign targeting girls in Ghana	Quasi-experimental matched design	2625 13–16-year-old girls	N/A
Karletsos et al. (2021)	Ghana	Mass Media & New Media, & Interpersonal communication Social media & Mass media	Investigate how well anti-smoking messages, delivered through both mass media and social media, can help change how adolescents in urban	Quantitative Study	First wave (7054) 3775 adolescent girls and 3279 adolescent boys aged 13–16 years in urban areas of Accra. Second wave 5069 participants	Not Involved in Design Minimally Involved in the implementation

		(Blogs, magazines), Group meetings & Events (SKY Girls Campaign)	Ghana think about the dangers of smoking, in a more positive direction			
Khalbous & Bouslama (2012)	Tunis, Tunisia	Media Visual (Paper) Adverts	To understand the relationship between smoking socialization and the effectiveness of anti-tobacco advertisements	Quantitative – Panel Surveys	351 students 12 -16 years	Not Involved in Design
Mansour et al. (2023)	Tunisia	Media HWLs	Improve and adapt a set of 16 pictorial Water pipe specific health warning labels (HWLs) created in an international Delphi study, to the Tunisian context	Mixed Methods Study	63 young adults 18-43 years	Not Involved in Design
Mostafa et al. (2018)	Egypt	Media HWLs	Investigate whether PHWs on Water pipe tobacco products lead to behaviour change	Quantitative Study	2014 waterpipe smokers and non-smokers aged 18 years or older	Not Involved in Design
Mostafa et al. (2021)	Egypt	Media Waterpipe Warning Labels (WTP WL)	Measure the perceived efficacy of existing against novel enhanced (generic and waterpipe-specific) WTP WLs and the associated factors among Egyptian waterpipe smokers and nonsmokers.	Quantitative Design	2014 Male and female waterpipe smokers and nonsmokers ≥18 years	Not Involved in Design
Odukoya et al. (2020)	Nigeria	Professional Medical	Improve text messaging as an	Quantitative Study	(N =946) Respondents =165)	N/A

		Communications Text Messaging	intervention among physicians to help them foster tobacco treatment (cessation) among their patients. Focal patients at least 12 years		In 3 tertiary care hospitals The age of medical personnel not mentioned	
Odukoya et al. (2014)	Lagos, Nigeria	Mass Media Health talks, information leaflets and posters	To assess the effect of a short school-based anti-smoking program on the knowledge, attitude and practice of cigarette smoking among students in secondary schools in Lagos State	Quantitative – non-randomized, controlled intervention	1031 students 10 – 21 years	Not Involved in Design Information leaflets and posters designed & introduced by researcher
Owusu et al.(2017)	14 LMICs including Nigeria and Egypt (2009-2012)	Mass Media Newspapers or magazines, television, radio, and billboards	Evaluated factors associated with three stages of intention to quit tobacco smoking among adults in 14 LMICs by using the transtheoretical model (TTM) of health behaviour change (pre-contemplation, contemplation, and preparation)	Quantitative Cross-sectional Secondary data analysis of Publicly available GATS data from 14 LMICs from 2009 to 2012	43,540 current tobacco smokers aged 15 years and above	N/A
Oyapero et al.(2021)	Lagos, Nigeria	N/A Anti-tobacco Messages (ATM)	Assess the association between exposure to Anti-Tobacco Messaging (ATM) and quit attempts among adolescents and young adults in Lagos, Nigeria	Quantitative Study	947 participants 15–35 years	N/A

Perl et al. (2015)	Senegal, Nigeria and Kenya	Mass Media Campaigns Mass media 5 Radio and 5 TV antismoking advertisements	Adapt available anti-tobacco television and radio advertisements from high-income countries for African countries	Mixed Methods Study	1078 Male and Female adult smokers and Nonsmokers 18 – 40 years	Not Involved in Design Other Tobacco control stakeholders involved in adaptation before the study
Singh et al.(2014)	Kumasi, Ghana	Media Text and Pictorial Health Warnings	Examine how Ghanaian smokers and nonsmokers view warning labels (text and pictures) on cigarette packs and investigate their opinions regarding the implementation of pictorial warnings in Ghana	Qualitative Study	(85) 50 smokers and 35 nonsmokers aged 15 years and older	Not Involved in Design
Siziya, Rudatsikira, and Muula (2008)	Somaliland	Mass Media Television, radio, billboards, posters, newspapers, magazines, movies	To estimate the prevalence of cigarette smoking, and determine associations of antismoking messages with smoking status	Quantitative Cross-sectional survey using secondary data analysis from GYTS Somaliland 2004	1563 students 13 – 15 years	N/A
Uchendu et al. (2018)	Nigeria	Constituency relations	To examine retailer awareness of tobacco control laws and willingness to be involved in control activities.	Quantitative – Cross-sectional	218 participants >30 ≥50 years	N/A
Wakefield et al.(2015)	From 10 LMICs - Bangladesh, China, Egypt, India,	Mass Media	Examine the comprehension, acceptability, and how effective 5 television advertisements could	Mixed method study	2399 smokers aged 18 - 34 years	Not Involved in Design

	Indonesia, Mexico, Philippines, Russia, Turkey & Vietnam	Five television advertisements	be in conveying anti-smoking messages and encouraging adults in low- and middle-income countries to quit smoking.			

Table highlighting the peer-reviewed sources of evidence and the extracted items

3.2 Participant Characteristics

Twelve studies that focused on mass media campaigns recorded male and female participants who were smokers and non-smokers aged 10 – 59 years cumulatively (Achia, 2015; Azagba et al., 2015; Bekalu et al., 2022; Hutchison et al., 2020; Karletsos et al., 2021; Khalbous and Bouslama, 2012; Odukoya et al., 2014; Owusu et al., 2017; Oyapero et al., 2021; Perl et al., 2015; Siziya et al., 2008; Wakefield et al., 2013). The participants in these studies were either conveniently, purposely or randomly sampled or recruited from local groups, schools or communities based on the purpose of the study.

Six studies that focused on Health Warning Labels (HWLs) included male and female smokers and non-smokers aged 5 – 43 years cumulatively (Adebiyi et al., 2016; Borzekowski and Cohen, 2014; Mansour et al., 2023; Mostafa et al., 2018; 2021; Singh et al., 2014). The participants in these studies were purposely recruited or sampled from universities, hospitals, brothels, primary and secondary schools, and neighbourhoods located in rural and urban areas.

Two studies that focused on professional medical communications and constituency relations included participants who were doctors from tertiary care hospitals and mostly female tobacco retailers aged >30 ≥50 years respectively (Odukoya et al., 2020; Uchendu et al., 2018). The participants in both studies were purposely recruited or sampled from a hospital and two communities that were rural and semi-rural.

Although most studies recruited participants 10 - 59 years, except in the studies by Karletsos et al. (2021); Khalbous and Bouslama (2012) and Odukoya et al. (2014); the health communication interventions were not mentioned to specifically target young people. Of the three aforementioned studies, only Karletsos et al. (2021) targeted and involved young participants in the implementation and even has some materials available online (See YouTube – SKY Girls GH). While Odukoya et al. (2014) and Khalbous and Bouslama (2012) targeted young people, none mentioned involving young participants in designing the materials used. The materials used by Odukoya et al. (2014) were designed by the researcher while Khalbous and Bouslama (2012) did not mention the origin of the (paper) advertisements used in the study.

The health communication interventions from the WHO FCTC reports highlighted the use of the World No Tobacco Day (WNTD) as a key platform for tobacco control campaigns in countries WHO, 2018 (p.37). The campaigns were reported to have targeted young people as well as other population sub-groups. The reports did not emphasize if specific campaigns targeting young people 10-24 years were conducted but in 2018 Chad reported implementing a peer education

training program for young people while Nigeria recounted using social media (#ClearTheAir) and influential celebrity leaders in the entertainment industry to engage young people in the same year. Similarly, among the twenty studies highlighted, only one referred to involving young Ghanaian girls 13 – 15 years in implementing the intervention (Karletsos et al., 2021) while the rest did not mention engaging young people as stakeholders or key decision-makers in designing or implementing the interventions.

3.3 Study Findings

3.3.1 Content and the Presentation Matters

Several studies found that content and the presentation of the content played a pivotal role in tobacco control health communication. Four studies noted that hard-hitting and emotionally evocative content presented using visual channels performed better among their participants. Perl et al. (2015) found that the television advertisements – "Coughing Child and Baby Alive"- which focused on the consequences of smoking on vulnerable and innocent children performed better than anti-tobacco industry messages among their participants aged 18 - 40 years. Mansour et al. (2023) found that HWLs showing external health effects like oral cancer and harmful effects on children were rated as more effective than those illustrating scientific facts about vague chemicals by their participants aged 18 – 43 years. Similarly, Wakefield et al. (2015) found that television advertisements featuring graphic images of serious health harms that elicited negative emotions and discomfort were perceived to be more effective. The advertisement was perceived as more effective than the one illustrating a medical term with the use of a complex metaphor – "Plastic Bubblewrap" - to explain smoking-related emphysema. Their participants were aged 18 – 40 years. Likewise, Adebiyi et al. (2016) found that pictorial health warnings showing that smoking cigarettes could cause cancer of the airways and impotence induced fear. These health warnings were thought to be better placed to prevent smoking initiation than those focused on stroke causation and harm to children. The participants in the study were 13 – 17 years old. Although not related to emotionally evocative content, Siziya, Rudatsikira and Muula (2008) found that content and mode of delivery could affect effectiveness and might contribute to unintended consequences. Siziya, Rudatsikira and Muula (2008) suggested this was because exposure to anti-smoking messages through health workers, and print media (posters, billboards, newspapers, and magazines) was not associated with reported smoking status. While on the

other hand, exposure through sports or community events seems to be associated with reported smoking. The participants in the study were 13 – 15 years old.

3.3.2 Reaction to Anti-Tobacco Content Varies

The reaction to anti-tobacco content by different groups varies and this was emphasized by studies in this review. In most studies, the reaction of non-smokers to anti-tobacco content was more positive than that of non-smokers. Perl et al. (2015) reported that non-smokers tended to rate advertisements in a more positive light than smokers. Mostafa et al. (2018) similarly found that pictorial health warnings (PHWs) had more effect on non-smokers than smokers. The same study recounted that non-smokers understood and discussed PHWs considerably more with people than current and former waterpipe smokers. In their study on socialization, Khalbous and Bouslama, (2012) also found that anti-smoking advertising was not equally effective among children. The authors found that it was easier to convince those who already have negative attitude towards smoking (anti-smokers) to never start smoking than those who have favorable attitudes (pro-smokers).

In a similar vein, Owusu et al. (2017) reported that smokers who were 15–24 years old, had a higher chance of being in the preparation to quit stage than smokers aged 25 years and above. The age disparity was also noted in the study by Oyapero et al. (2021), where younger participants were more likely to respond to anti-tobacco messages (ATMs) than older participants. Likewise, the study by Adebiyi et al. (2016) reported that graphic warning labels depicting stroke as an effect of smoking were deemed less fearful by the young participants who most likely found it hard to engage with the subject as stroke was envisioned as a remote issue more associated with older persons.

3.3.3 Anti-tobacco messages can Influence smoking

Several studies also found that anti-tobacco media messages could prevent smoking initiation and promote intention to quit and quit attempts. Odukoya et al. (2014) found that an anti-smoking awareness programme was effective at improving tobacco-related health knowledge, influencing attitudes towards tobacco use and increasing the desire to quit among current adolescent smokers. Oyapero et al. (2021) found a significant association between exposure to anti-tobacco

messages and quit attempts and that likelihood of quit attempts decreased with older age. Achia, 2015 also found a positive association between cigarette smoking and media utilization but only a small percentage of women 15-49 years old had access to or utilized media facilities in Sub-Saharan Africa. Likewise, Bekalu (2022) found that exposure to anti-smoking message was associated with greater risk perceptions of smoking which could facilitate prevention of smoking initiation and intention to quit. Similarly, Azagba (2015) found that cigarette tax increase in combination with anti-tobacco national media campaign impacted quit attempts as the consumption of cigarettes significantly reduced. Siziya, Rudatsikira and Muula (2008) also found that knowledge related to having discussed with family or being taught in school about the harms of smoking, was associated with reported non-smoking.

3.3.4 Message Clarity and Contextual Considerations

Studies also found that messages need to be clear and context specific. Perl et al. (2015) found that unambiguous messages that were culturally relevant had the ability to resonate with the target audience, which would in turn contribute to a successful campaign. Mansour et al. (2023) also found that the type of message that was deemed important by tobacco control experts in a Delphi Study by Asfar et al. (2020) was not deemed so by the study participants. They reported that HWLs that illustrated scientific facts without showing a specific disease were not deemed effective; as they were unclear and hindered the acceptance of the message. Similarly, Singh and Owusu (2014) found that participants considered text-only warnings to be ineffective in communicating the health risks of smoking and that picture and text warnings need to be context and country-specific. Likewise, Odukoya et al. (2020) found that sending a simple 160-character text message was effective at raising awareness among medical personnel.

4.0 Discussion

The available sources of evidence show a dearth in literature that comprehensively address all six areas of health communication. This is not surprising given the reportedly low prevalence of tobacco use in Africa which may not necessitate comprehensive research. Again, limited research design owing to a lack of research capacity that has been recorded in tobacco control within sub-Saharan Africa over the last fifty years (Mamudu et al., 2018) could also be a pointer. No paper addressed policy communication & policy advocacy and community mobilization & citizen engagement, while only one paper each addressed constituency relations, and professional

medical communication. The lack of studies that address policy communication, policy advocacy, community mobilization, and citizen engagement is an area that requires closer examination in Africa especially given the politics and power-play that often surrounds tobacco control (Egbe et al., 2022; Mamudu et al., 2018; Udokanma, Ogamba and Ilo, 2021).

It is also pertinent to mention that the focus of tobacco control health communication in the reported studies was mostly preventive rather than cessative. Again, this is expected, given the low prevalence of tobacco use in the African region. Although the use of health communication to drive quit attempts has been established, this was not explored by most studies in the review. This could be due to a lack of a skilled clinical workforce, and inadequate resources to effectively manage cessation programs. The necessity for investment in tobacco control research to build capacity has been underscored as a critical need to support the evidence base needed for implementation of the WHO FCTC (Mamudu et al., 2018).

The limited evidence signals the need for more studies that cover a variety of areas to holistically address tobacco control health communication in Africa. Another probable reason for the dearth in literature in tobacco control health communication, especially among young people, could be the perspective ascribed to smoking. Smoking among adults is culturally and societally more acceptable than smoking among young people (Doku et al., 2012; Egbe et al., 2014; Kirk, 2012) who are not expected to practice the habit or identify as smokers. This age disparity creates a vacuum that will limit tobacco use intervention and research among young people. This is because including young people in tobacco control could indirectly be acknowledging that young people also smoke whether acknowledged by the adults or not.

The main area of health communication focused on was mass media communications and even that was not addressed effectively based on the set standard by the WHO FCTC (See Table 1). The limited use of effective mass media for health communication in tobacco control has also been highlighted in the 2023 WHO report on the global tobacco epidemic. The report identified inadequate use of health communication among countries of the world that may have been further exacerbated by the COVID 19 pandemic. The report stated that “less than one quarter of the world’s 1.5 billion population were exposed to a best-practice mass media campaign in the past two years; and people in low-income countries were the least exposed to anti-tobacco mass media”. The limited use of effective health communication could be due to the varied barriers and limitations that currently impact tobacco control health communication (Anderson, Becher and Winkler, 2016; Wisdom et al., 2018). One of the barriers (funding) could be why most countries

align their health communication plan to the WHO World No Tobacco Day; and as such, have no country-specific long-term health communication plan or intervention. The issue arising from funding could also be why tobacco control has not enjoyed media coverage compared to tobacco industry corporate social responsibility projects (ATCA, 2023) as the tobacco industry wields more financial capacity to influence the narrative via the available media apparatus (McDaniel, Cadman and Malone, 2018).

Again, although most studies focused on mass media communication, when looked at closely, they were mostly secondary studies and are not able to provide detailed information on the type of content or medium of presentation for anti-tobacco campaigns and messages that can be focused on when targeting young people. There is need to qualitatively ascertain the content that better suite young people based on their perspective, especially as mass media campaigns and advertising bans have been identified as the most effective policies in Africa when applied singularly and mixed (Munthali et al., 2021).

The content and medium of presentation of anti-tobacco messages holds a vital place in tobacco control health communication. For instance, the Global Progress Report (2020 -2021) curated details on the number of WHO FCTC parties that focused on health risk of tobacco consumption. Similarly, keen attention was paid to segregating campaigns that either engaged or did not engage the use of TV/radio in the WHO GHO ATMCs. The studies that focused on mass media campaigns and use of health warning labels (HWLs) also aimed to find the best possible content and means of presenting it in the best way for the participants to achieve the desired outcomes. Participants in the studies were given the opportunity to identify their preferred anti-tobacco communication materials (Perl et al., 2015; Adebiyi et al., 2016) so as to better fit the context and population. The focus on content and medium of presentation is not unusual given the body of evidence that supports targeted messages for effective communication (Cavallo et al., 2019; Krueter and Wray, 2003; Noar, 2006) and using a wide range of communication channels to reach a target group for an extended period (Karletsos et al., 2021; Noar, 2006). The use of targeted messages and a wide range of communication channels to facilitate effective communication is even more critical when young people are the focal group as they are still in the developmental phase of identifying their preferences and could be reached through a variety of channels and content (Karletsos et al., 2021).

Whereas content and presentation of anti-tobacco messages is relevant in health communication, the studies that considered mass media campaigns and use of health warning labels (HWLs)

focused more on adapting and testing content than in the development. One of the advantages cited for focusing on adaptation is the cut down on scarce resources that would have been spent on development which would be redirected to implementation as well as increasing the reach and exposure to anti-tobacco content (Perl et al., 2015). While this is a salient point given the limited resources available for health communication in LMICs in Africa (Perl et al., 2015), development of content is still vital (Mostafa et al., 2021), to reach underserved, overlooked or hard to reach groups (Borzekowski & Cohen 2014; Uchendu et al., 2018), enhance message novelty effect (Bekalu et al., 2022) and acknowledge the differences in reaction among different groups (Perl, 2015; Mostafa, 2022). The message novelty effect enables the message recipient to pay more attention as people usually favour novel stimuli over familiar ones (Reggev et al., 2018). In addition, the disparity in reaction to content among different groups substantiates the need for target groups to be involved in the design and development of anti-tobacco content (Perl, 2015; Mostafa, 2022); as well as using health communication early (Borzekowski and Cohen 2014; Khalbous and Bouslama, 2012; Oyapero, 2021) and consistently (Noar, 2006). Health communication that takes into consideration the disparity in reaction to content is also important as non-smokers and young people will react more positively than smokers and older people (Perl et al., 2015; Mostafa et al., 2022). For this reason, the use of pictorial or graphic HWLs only on tobacco products at point of sale should be reconsidered as a different audience could be reached and react better in a different setting which will further maximize the benefits of health communication.

Whether adapting content for a specific context or developing new ones, the relevance and clarity of the content is important. The ability of the target audience to process, comprehend and accept the anti-tobacco message will impact the effectiveness of tobacco control health communication. This is because when messages are clear, resonate with the audience, and are culturally and contextually relevant; they will contribute to a successful anti-smoking campaign (Perl et al., 2015; Mostafa et al., 2022). The SKY Girls Campaign is an example of an intervention that was evaluated as successful (Hutchison et al., 2021). The intervention though specifically adapted for young Ghanaian girls 13 – 15 years made no mention of involving young people in the design of the intervention. This was because the intervention was being replicated in an African country after recording success in a high-income country. While the intervention did not engage the young people in its design, it encouraged them to participate in the implementation and to give their opinions. For instance, young girls were encouraged to come for events and bring their friends and were also engaged to provide their opinions about SKY Girls film and activities. Another factor

that contributed to the success of the SKY Girls campaign is the use of interpersonal relationship. The value of interpersonal relationships cannot be over emphasized in tobacco control health communication when the focal group is young people as it plays a vital role. For instance, the study by Karletsos et al. (2021) showed that message dissemination, and reach improved when anti-tobacco messages were discussed among peers rather than when discussed with parents.

The involvement of the target audience has been highlighted as important in the process of development in health communication as what the target group sees as important may not be seen in the same way by experts (Mansour et al., 2023). Although most studies engaged the participants by using quantitative or qualitative approach to gain their opinion; it was more consultative than participatory. Like Perl et al. (2015), Hutchison et al. (2020), and Mansour et al. (2023) did not also highlight any initial involvement of the focal groups in the design of the materials tested, but pointed to the significance of engaging target groups in tobacco control health communication as it was pivotal in ensuring communication is clear and relevant to the focal group. Although a consultative approach may be suitable when HWLs are the focus given the rigorous need to match labels to professional, regulatory and country-specific standards; it may not be the most suitable when developing mass media campaign messages as they usually require a more qualitative approach and outlook (Cavallo et al., 2019; Schiavo, 2014). This lack of involvement of the focal groups at the onset may have been due to funding, accessibility and time restraints, given that Perl et al. (2015) only engaged professional and governmental tobacco control stakeholders in the process of adapting the communication materials.

Although the health communication interventions from the WHO FCTC reports highlighted that various stakeholders were involved or engaged in the interventions, young people were conspicuously absent in the list of stakeholders (See Table 4). From the list of stakeholders enumerated in the reports, stakeholders like public agencies, NGOs, and international organizations were involved in the development and implementation of intersectoral programmes and strategies for tobacco control. The stakeholders highlighted were those with some element of power or control who could influence the desired campaign outcomes. While this is a good strategy given the vital role of NGOs and government bodies in tobacco control (Munthali et al., 2021, Udokanma et al., 2022), it may not be the best approach when young people who are the target group are absent (Mansour et al., 2023) as their perspective has a strong chance of being different (Mostafa et al., 2022). The drive in ensuring a wide range of stakeholders are involved in tobacco control is encapsulated in the updated Global Alliance for Tobacco Control (GATC) Strategic Plan for 2022 to 2025 - Convening Stakeholders and Partners-which seeks to

significantly incorporate more stakeholders within and outside the tobacco control space for effective and sustained implementation of the WHO FCTC.

4.1 Future Directions

The findings of this review signals a vacuum in the input of young people in Africa's tobacco control health communication agenda. While young people are involved in the development of health communication materials, they are absent in the design process which makes the activity more consultative than participatory. In the Global Progress report for instance, even though the percentage of parties that focused on the health risks of tobacco smoking was 70% -92% between 2010 and 2021; it was not clear whether the health risk focused on aligned with the health priorities as identified by the target group themselves. Also, in the Global Progress report while most countries consistently reported targeting children and young people; it was also not clear how they involved them in the design and development of the programs, or the materials used. Between 2010 and 2021, only two African countries in the WHO FCTC report (Chad, Nigeria) mentioned some level of participation by young people. There is now need for young people who make up about 60% of the continent's inhabitants (UNFPA, 2017) to be more involved in tobacco control health communication as those not exposed to anti-smoking education are susceptible to using tobacco products (Doku et al., 2012; James et al., 2022). Also young people should be more involved in tobacco control if mass media and social media are the preferred channels for dissemination (Karlestos et a., 2021), as these platforms will play significant roles in the changing landscape of tobacco control by widening reach and influencing the narrative (Hamil et al., 2013). The involvement of young people will give room for targeted health communication that is more relevant and better incorporate local perspectives which has been recommended as a best practice for tobacco control in Africa (Mbulo et al., 2016).

The available data also reflects the need for a more consistent, strategic, and targeted approach to health communication by African countries especially given the rapid changes associated with tobacco, nicotine and related products (Ling et al., 2022). Although health communication alone will not solve the issue of tobacco smoking; it is still a vital part in every effective tobacco control program (CDC USA, 2018) and local perspectives must be engaged for success (Mostafa et al., 2022; Mbulo et al, 2016).

The prevalence of tobacco use in the African region is still small compared to other WHO regions as such having a strategic health communication plan that is driven by the perspective of Africans for Africans will be vital to ensure tobacco use prevalence remains low. The programmes and policies adopted must reflect the context for the associated interventions to be useful and sustainable. African parties of the WHO FCTC must take cognizance of their context including identifying targeted content (focusing on groups), local structures and resources while integrating recommendations for effective health communication interventions. By taking cognizance of their contextual needs, African countries would lay the foundation for consistent and effective health communication interventions for Africans by Africans.

4.2 Limitations

This review did not consider use of health warning labels as one of the forms of health communication interventions while examining the grey sources. This is because, primary research has extensively covered health warning in the peer reviewed sources. Also, health warning labels are attached to the tobacco product itself and is disseminated at point of sale. Plus, Article 12 of the WHO FCTC and the WHO anti-tobacco mass media campaign criteria does not touch on health warning labels as this is covered in Article 11.

Article 12 of the WHO FCTC has 12 indicators. These indicators do not necessarily align with the MPO**W**ER indicator **‘’W”** which covers anti-tobacco mass media campaigns as well as health warning labels simultaneously. The MPOWER strategy for tobacco control is used by countries as indicators to track progress on the WHO FCTC**.** To reduce this limitation, this review extracted data from the WHO GHO specific to anti-tobacco campaigns in addition to information on Article 12 from the Global Progress Reports. Also, the global progress report was first released in 2006, but this review started with the reports from 2010 as it aligns with the timeline (2010 – 2020) of the data reported in the WHO GHO ATMCs.

This review does not account for the individual report from each country for the Global Progress Reports. It only accounts for information provided by the WHO FCTC who serve as a collating body for countries who are the primary source of information. The WHO FCTC as the collating body requests additional information on implementation by parties where necessary to support the data provided and further enhance its relevance.

Lastly, this review being a scoping review does not uncover international evidence as it is specific to the African context, but; it exposes knowledge gaps in areas of health communication that needs to be addressed in future research and has incorporated data from an international body that categorized and made use of evidence that are relevant globally.

4.3 Conclusion

This review has contributed to examining and highlighting the different areas of health communication in Africa, which could be vital for future studies. It has highlighted the dearth of tobacco control health communication literature and emphasized the lack of participation in tobacco control health communication among young people. Tobacco control health communication in Africa is still practiced inconsistently despite having the lowest prevalence in comparison to other WHO regions. This inconsistency can be addressed by leveraging local perspectives, local structures, and available resources and actively involving young people, who make up most of the African population, while integrating recommendations for effective health communication interventions.

CHAPTER TWO (B)

LITERATURE REVIEW

NARRATIVE REVIEW OF THE TOBACCO CONTROL HEALTH COMMUNICATION LANDSCAPE IN NIGERIA: POLICY, PEOPLE, AND STRUCTURES

5.1 Introduction

The purpose of the narrative review is to streamline the literature review to provide a closer look at tobacco control health communication from a continent level to a country level. Given the contextual nature of health communication, the narrative review would aid the process of identifying the key actors and factors influencing Nigeria's tobacco control health communication landscape; and by so doing, identify where young people are included or not. The tobacco control space in Nigeria has a rich history that can best be covered using a narrative review. The history of tobacco control in Nigeria is addressed starting with the policy space as tobacco control policies have laid the foundation for all tobacco control efforts by people and organisations. This review traces tobacco industry interference through front groups and corporate social responsibility (CSR) activities focused on educational institutions and young people. The review also covers tobacco use among young people in Nigeria and the health communication interventions in the WHO GHO previously reported in the scoping review. This review also builds the foundation for the theoretical and methodological approach that guided the thesis.

5.2 Overview of Tobacco Control Policy & Strategy

Tobacco control is an all-encompassing term for tobacco use prevention and cessation. The prevention and cessation measures to reduce tobacco demand and supply are often the focus of comprehensive tobacco control programmes. These measures to reduce the consumption of tobacco products as well as the accompanying health risks and mortality could be through policies, laws, and education (Union for International Cancer Control, 2024).

The policy measure is often derived from the World Health Organisation's Framework Convention on Tobacco Control (WHO FCTC). The WHO FCTC is the first international treaty with full support from the WHO. It is an evidence-based treaty that is aimed at addressing a global tobacco epidemic (WHO FCTC, 2021). The WHO FCTC provides a foundation for parties to the convention (countries) to have a policy base specifically related to tobacco control that they can work with

within the context of their countries. The WHO FCTC has 38 articles with their guidelines to enable countries to meet set targets. The 38 articles in the WHO FCTC can be placed within the six MPOWER measures.

While the WHO FCTC guidelines provide the basis for countries to execute and oversee tobacco control, the MPOWER measures provide the platform to actualize the FCTC at country level. These measures help to synchronize country-level implementation of effective interventions to decrease the demand for tobacco (Bilano et al., 2015). The MPOWER measures track country progress using select indicators which are used to determine the degree of enforcement (Mendez et al., 2013).

These measures are:
Monitor tobacco use and prevention policies
Protect people from tobacco smoke
Offer help to quit tobacco
Warn about the dangers of tobacco
Enforce bans on tobacco advertising, promotion, and sponsorship
Raise taxes on tobacco

The WHO FCTC Article 12 (Education, Communication, Training & Public Awareness) can be placed within MPO**W**ER measure “W”. It provides a policy guideline to develop interventions that will warn different population groups about the dangers of tobacco use. Many countries key into the World No Tobacco Day (May 31st each year) to record their achievements for Article 12.

Given the projected challenges that follow tobacco use, so far, 45 African countries have ratified the WHO FCTC (WHO, 2023). While implementation of these regulations is still a work in progress, more needs to be done that transcends having a working document.

5.3 Overview of the Tobacco Control Policy Space in Nigeria: Policy, Tobacco Industry Interference & Tobacco Control Organisations

Tobacco control in Nigeria has suffered a series of setbacks due to tobacco industry interference and lack of government will. From 1990 till date, Nigeria has had ten tobacco control laws in effect (Campaign for Tobacco-Free Kids CFTFK, 2021a). These ten laws are:

- Tobacco Smoking (Control) Decree (No. 20) 1990
- Tobacco Smoking (Control) Act (1990 No. 20)
- A Law to Prohibit the Advertisement of Cigarette and Other Tobacco-Related Products (2002, No. 4)
- Nigerian Industrial Standard (NIS) 463:2008, Standard for Tobacco and Tobacco Products - Specifications for Cigarettes
- Nigerian Industrial Standard (NIS) 463:2014, Standard for Tobacco and Tobacco Products - Specifications for Cigarettes
- National Tobacco Control Act, 2015
- Nigerian Industrial Standard (NIS) 463:2018, Standard for Tobacco and Tobacco Products - Specifications for Cigarettes
- Nigerian Industrial Standard (NIS) 1031:2018, Standard for Tobacco and Tobacco Products - Smokeless Tobacco Products
- National Tobacco Control Regulations, 2019
- National Film and Video Censors Board Regulations, 2024

The WHO FCTC was ratified in Nigeria in May 2005, but a comprehensive policy (National Tobacco Control Act) was passed into law ten years later in 2015 (Oladepo et al., 2018). Insufficient funding, tobacco industry interference, politicking, conflict of interest (protecting the health of citizens versus the economic gains from the tobacco industry), and lack of political will in addressing the administrative and executive roles within policies were some of the major hurdles that inhibited tobacco control efforts (Egbe et al., 2014; Isip and Calvert, 2020; Oladepo et al., 2018; Udokanma et al., 2021).

The National Tobacco Control Regulations of 2019 (previously the National Tobacco Control Act of 2015) was passed into law in December 2019. The National Tobacco Control Regulations (NTR) 2019, implements many provisions of the National Tobacco Control Act including smoke-free places, tobacco advertising, promotion, and sponsorship, tobacco packaging and labelling, prevention of tobacco industry interference, and tobacco product disclosures, among others (Campaign for Tobacco-Free Kids CFTFK, 2021a). The execution of the NTC Act of 2015 and the NTR of 2019 varies in the thirty-six states in the Federal Republic of Nigeria and within each state (rural and urban). This means that tobacco control efforts within a state and between two states may differ even with a national or unified working document.

In 2016, a report by the African Tobacco Control Alliance (ATCA) showed that tobacco companies primarily target young people in schools to build their market base. The study sample which included 79 primary and secondary schools from five countries in Africa (Nigeria, Cameroon, Benin Republic, Burkina Faso and Uganda) displayed the subtle tactics employed by the tobacco industry to take advantage of the curiosity of young people. They did this by strategically making use of sales outlets that are close to schools to display and advertise their products. For instance, in the majority of the schools sampled, tobacco products were displayed for sale next to products like sweets and snacks which drew the attention of students. In Nigeria, 78% of the tobacco sales outlets in a 100 meters radius (300 feet) around schools were kiosks within the neighbourhood where students would be sent to purchase needed items. This meant that young people could purchase tobacco products in single sticks if they chose and would most likely not be challenged as the sales outlet owner would assume the student was on an errand for an adult. This is because the social interactions within family units usually demand that young people go on errands for adults, as such, young people going to buy tobacco products will most likely not be viewed as strange or wrong (Egbe et al., 2014). Other studies have previously echoed the findings of the ATCA study, hence reinforcing that tobacco companies target young people through strategic marketing and by taking advantage of weak tobacco control legislation or a lack of implementation in many developing countries (Coombs et al., 2011; Egbe et al., 2017; 2022; Iyiola, 2008). The ATCA report clearly showed violations of the provisions of the NTC Act of 2015 as single-stick cigarettes were sold including flavoured tobacco products. Tobacco products were also advertised using buildings within neighbourhoods (kiosks, houses) while cigarettes were sold to minors.

A major tactic used by the tobacco companies in Nigeria has been the corporate social responsibility (CSR) approach. In 2019, the University of Nigeria (UNN) Nsukka, Enugu State, accepted $80 million per year funding through the Foundation for Smoke-Free World (FSFW); an organisation that has been linked to Philip Morris International as their sole financier. The grant was to facilitate research for alternative livelihoods for smallholder tobacco farmers (Abade, 2019 for The Guardian Newspaper). Similarly, the Foundation for Smoke-Free World funded a STEM scholarship competition where twenty young people in secondary schools received $60,000 each (Vanguard News, 2020).

Non-governmental Organisations are also being funded to implement empowerment programmes for young people. Genius Hub Global Initiative is a Benin City-based NGO certified by the National Business and Technical Examinations Board (NABTEB), Industrial Training Fund (ITF) as well as a GIZ (German Society for International Cooperation GmbH) training partner. Genius Hub

accepted the grant awarded to them by the British American Tobacco Nigeria Foundation (BATNF) as part of their corporate social responsibility towards aiding the development of young people in Edo State. This grant was used for youth empowerment activities that included skill acquisition training and distribution of work equipment (sewing machines, make up kits, work tools for welding, etc.) to about 100 youths who were victims of human trafficking after successful completion of the training. This empowerment project was executed with the support and collaboration of the Edo State Government Task Force Against Human Trafficking (ATCA, 2021).In addition, Nigeria is also the top country in Africa where the tobacco industry benefits several incentives (tax breaks, legalization of sponsorship and delays in implementation of tobacco control laws) along with awards for CSR activities (ATCA, 2023). Consequently, Nigeria along with two other countries (Kenya and Tanzania) showed the most deterioration in tobacco industry interference index scores between 2021 and 2023 (ATCA, 2023).

Although Tobacco Industry front groups are present, other organisations such as Civil Society Organisations (CSOs) and Non-governmental Organisations (NGOs) have been actively involved in tobacco control. These organisations have been identified as key players in the policy and political framework of tobacco control in Nigeria (Udokanma et al., 2021) as they also play pivotal roles in driving policy reform, implementation, and enforcement (Drope, 2011).

The Nigerian Tobacco Control Alliance (NTCA) is a frontline organisation made up of a coalition of Nigerian organisations focused on tackling tobacco use through policy, advocacy, and education. The NTCA began making targeted efforts towards a smoke-free Nollywood by utilizing the Nollywood movie industry to push for adherence to the NTC Regulations especially among young persons by preventing the display of tobacco use in movies (Vanguard, 2020; 2021a; 2021b). The advocacy efforts of the NTCA have thus far gained the support of top Nollywood actors who are seen as role models by many young people in Nigeria. The efforts of the NTCA has also paved the way for the passage of the most recent tobacco control bill in Nigeria – The National Film and Video Censors Board Regulations, 2024. This step could stem from the fact that the NTR has been passed into law giving tobacco control bodies a robust legal tool to work with.

5.4 Tobacco Use in Nigeria & Factors Propelling Smoking among Young People

Tobacco use poses a series of challenges for the health system in Nigeria especially as Nigeria like other Low-and-Middle-Income Countries (LMICs) is battling the double burden of disease.

Tobacco use is a challenge for the Nigerian health sector primarily due to expenditures towards tobacco-related diseases. Tobacco smoking is reported to solely contribute to the hospitalization of 352, 000 persons per year (Drope, 2011) while cases due to secondhand smoke are still underreported. Tobacco-related disease hospitalization costs have been estimated to be between $742 dollars to over $2,300 (Owoeye, and Olaniyan 2015). Also, the eventual development of lung cancer among young people who are current smokers is estimated at $487, 300 at a 10% inflation rate (Olumide et al., 2022).

Tobacco use among young people could range from the use of any tobacco product like cigarettes (Ekanem et al., 2010) as well as Shisha (Abraham, Egbe and Ayo-Yusuf, 2019). On the other hand, smokeless tobacco like snuff has mostly been used by older adults (Okuna, 2018; Desalu et al., 2010), while the younger generation seems to be more adventurous with the products they experiment with (Abraham, Egbe and Ayo-Yusuf, 2019; Egbe et al., 2016). According to the WHO Atlas of African Health Statistics report (2022), the prevalence of tobacco use among girls is between 4.6% to 36.6%, while boys are between 7.8% to 36.5%, showing a growing trend of tobacco use among women with reportedly 22, 000 women dying yearly due to tobacco-related diseases. In Nigeria, the prevalence of smoking among young people (10 - 24 years) is estimated to be between 0.2% – 32.5% depending on the region of the country (Oyewole, Animashaun and Chapman, 2018). The systematic review by Oyewole, Animashaun and Chapman (2018) is the only review in Nigeria that has synthesized the risk factors associated with tobacco use among young people (10-24 years). The review categorized risk factors of tobacco use into five main categories. These were peer influence, male gender; family conditions, and psychosocial factors while additional risk factors were concomitant substance abuse, media advertisements and increasing age. Although the authors did not highlight it, the risk factors show some interconnections that link together. When looked at closely, these risk factors show interconnections that reflect people and their social environments, which aligns with the theoretical lens offered by the Social-ecological model (See 5.5).

In addition, Oyewole, Animashaun and Chapman (2018) highlighted the need for a multi-stakeholder approach in tobacco control; plus, 95% of the study sites in the review were school settings which are a key social structure in the lives of young people. Although the review highlighted the male gender as a risk factor within Nigeria, the WHO Atlas of African Health Statistics report (2022) has highlighted an increasing trend in tobacco use among girls in Africa, which was also used to inform the thesis as girls and boys were considered for participation.

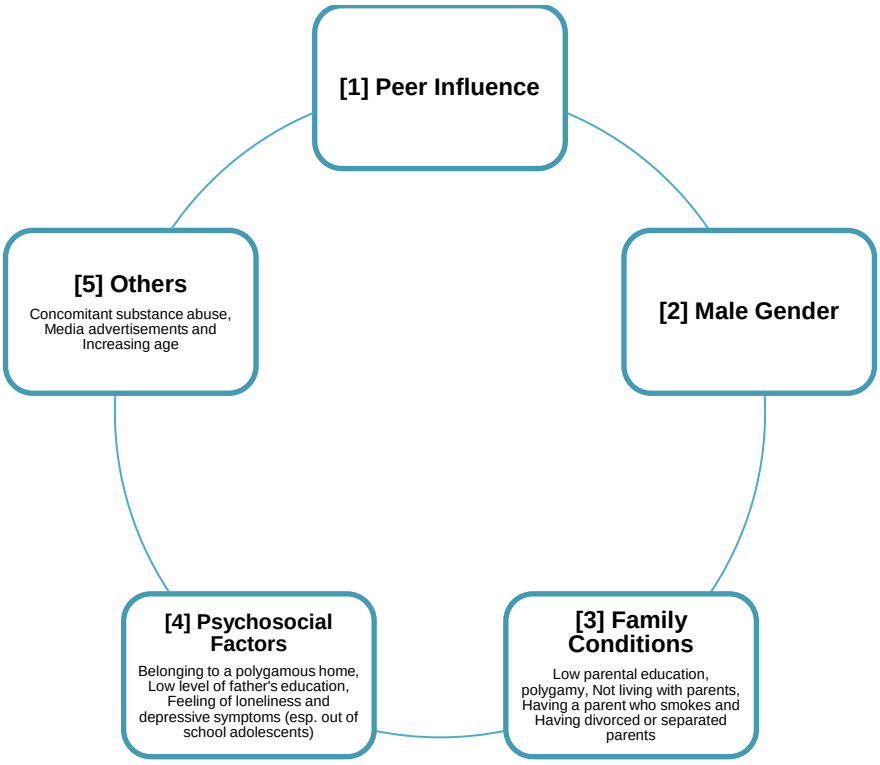


Figure 4: Categories of risk factors of tobacco use among young people in Nigeria (Oyewole, Animashaun and Chapman, 2018).

5.5 Theoretical Perspective (Social-Ecological Model of Health Promotion)

Tobacco smoking has been viewed as a public health challenge that requires a multi-level or multi-sectoral approach to be successfully tackled (Oladepo et al., 2018). Despite being an individual behaviour, the literature on tobacco smoking among young people in Nigeria demonstrates an interaction between and interdependence on factors within and across the individual level to a larger social system. These factors are linked to intrapersonal, interpersonal relationships (Egbe et al., 2014; Osuh, Fagbule and Olatunji, 2020, Faseru et al., 2012; Osungbade and Oshiname, 2008), and societal factors like poor funding and weak policy implementation (Egbe et al., 2022; Oladepo et al., 2018).

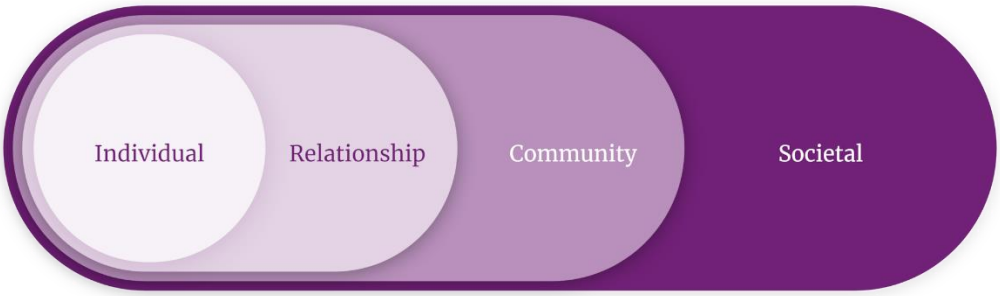


Figure 5: Center for Disease Control and Prevention (CDC) Social-Ecological Model (CDC USA, 2024)

The **Social-Ecological Model or Socio-Ecological Model (SEM)** is a framework that explains how individual behaviour is influenced by multiple levels of interaction within a social and environmental context. It is commonly used in public health, psychology, and social sciences to design interventions that address complex health and social issues. The model emphasizes that behaviour is shaped by multiple levels, including individual, interpersonal, organisational, community, and policy influences (McLeroy et al., 1988).

The four levels of the SEM by the CDC as a framework for prevention are focused on the following:
Individual level: Personal and biological factors that may increase the risk of engaging in smoking, such as age, education, income, and substance use
Relationship Level: Close social connections such as family, and peers that can shape behaviour and influence the likelihood of smoking.
Community Level: The role of social environments like schools, workplaces, and neighborhoods in influencing behaviours.
Societal Level: Broad societal factors, including cultural norms, economic conditions, and policies that can influence smoking.
(CDC USA, 2024).

The socio-ecological model (SEM) of influence recognizes and emphasizes the interactive role that exists between individuals and a larger social system. The model suggests that changes in the social environment will in turn yield changes in individuals and that the support of individuals and institutions is essential for implementing environmental changes (McLeroy et al., 1988). According to the CDC, the SEM offers a four-level preventive approach to identified causes at

different social strata. These include the individual, interpersonal, community, and societal levels (CDC USA, 2024).

The SEM can provide a lens with which this thesis can identify campaign themes at key levels of interaction for health communication in tobacco control. This perspective guided the selection of data collection methods for generation of health communication ideas for this thesis to address each level of interaction. This thesis was ultimately informed by the socio-ecological model with the goal of eliciting materials/messages and strategies for health communication informed by young people at the intrapersonal, interpersonal, community and societal level.

5.6 Overview of Tobacco Control Health Communication in Nigeria: School Settings & Mass Media

In Nigeria, health communication for smoking prevention among young people is not an area that has been actively researched. Most studies carried out are usually quantitative, cross-sectional studies (Oyewole, Animashaun and Chapman, 2018) that make use of questionnaires to establish prevalence and factors contributing to tobacco use. Although most of these studies target young people in secondary schools (Ekanem et al., 2010; Itanyi et al., 2020; Omaduvie and Adisa, 2015; Osuh, Fagbule and Olatunji, 2020; Osungbade and Oshiname, 2008) and tertiary institutions (Atoyebi et al., 2013; Hammagabdo et al., 2018), very few notable interventions have been implemented thus far; majority of which are focused on teaching young people not to engage in tobacco use (Adebiyi et al., 2016; Odukoya et al., 2014; Salaudeen et al., 2013; Vigna-Taglianti et al., 2021).

The interventions by Salaudeen et al. (2013) and Vigna-Taglianti et al. (2021) were focused on young people in a college (19 - 26 years) and a secondary school (12 – 14 years) respectively. Both studies focused on a set of teaching lessons as the intervention for participants. The "Unplugged" substance use prevention project was a combined social competence and social influence universal school curriculum, comprising 12 standardized units of one hour each, delivered by trained class teachers (Vigna-Taglianti et al., 2021). Sessions on information on the consequences of tobacco, alcohol, and drug use were part of the program. The unplugged project significantly reduced recent alcohol use, and prevented progression to more frequent drinking by enhancing adolescents' beliefs, social environment, and risk perceptions but, it had limited impact in reducing cigarette or marijuana use.

The intervention by Salaudeen et al. (2013) was a pre-post intervention that featured lessons on the health hazards of cigarette smoking, factors influencing the initiation of cigarette smoking, strategies for quitting, and methods for controlling cigarette smoking. The study assessed the effects of health education intervention on knowledge of health hazards, attitude, and practice of cigarette smoking among college students. The authors reported that health education was effective in improving participants' knowledge, awareness (especially on cardiovascular diseases) on the health consequences of smoking cigarettes and their attitude towards smoking.

Other interventions have also used the school setting but taken a mass media approach for health promotion (Adebiyi et al., 2016; Odukoya et al., 2014). An example is the study by Odukoya et al. (2014) which used a quantitative non-randomized controlled intervention with young participants (10 - 21 years). The study assessed the effect of a short school-based program on knowledge, attitude and practice of cigarette smoking using health talks, information leaflets, and posters designed by the authors. Similar to the findings by Salaudeen et al. (2013), Odukoya et al. (2014) found that the anti-tobacco awareness programme effectively enhanced tobacco-related health knowledge, shaped attitudes, and boosted quitting intentions among adolescent smokers.

The school setting is a key component to consider for tobacco control interventions among young people in Nigeria as it offers a social structure for mass inclusion, learning and development. This thesis is informed by using the school setting as one of the key social structures within communities.

5.7 Overview of Tobacco Control Mass Media Campaigns in Nigeria (2010 – 2024)

According to the WHO GHO data, Nigeria has so far recorded seven anti-tobacco campaigns between 2010 and 2022. The WHO GHO campaign codes (See Table 4) show that between 2010 and 2020, the six campaigns either had no data reported (code 1) or were campaigns that were conducted for less than three weeks on a national scale (code 2). Despite the poor track record, Nigeria started recording noticeable anti-tobacco mass media campaigns (see Clear the Air Campaign in Table 4) after the National Tobacco Control Act (NTC Act) was enacted in 2018. Similarly, Nigeria made further progress in their anti-tobacco mass media campaigns (See Smoke-Free Nollywood & Don't Burn Their Future in table 4) after the National Tobacco Control Regulation was passed in 2019. These campaigns were aimed at creating awareness about tobacco control laws and warning key groups about the dangers of tobacco smoking.

In the seven campaigns recorded so far, participation of young people in campaign design has been non-existent. Young people have only been involved during campaign implementation (See Table 4). The lack of participation by young people in campaign design is also reflected in the campaign materials. For example, the “Don’t Burn Their Future” campaign video (See Table 4) while addressing the prevention of access to tobacco products does not exactly address young people directly. As shown in the systematic review by Oyewole, Animashaun and Chapman (2018), peer pressure is the foremost risk factor propelling tobacco use among young people in Nigeria (See Figure 4).

Non-Governmental Organisations (NGOs) and Civil Society Organisations have made a strong impact in promoting the anti-tobacco mass media campaigns in Nigeria. Their involvement has propelled government and other stakeholder’s involvement in tobacco control showing significant promise; especially with the development and launch of the National Tobacco Control Communication Strategy, 2024– 2028 on 22nd August 2024 by the Federal Ministry of Health and Social Welfare as part of key policy documents aimed at addressing the growing burden of non-communicable diseases (NCDs) in Nigeria (See Federal Ministry of Health and Social Welfare post on Twitter (X) https://x.com/ncds_fmohNg/status/1826192819364466805).

Table 4: Anti-tobacco Mass Media Campaigns in Nigeria (2010 – 2024)

Year/WHO GHO Campaign Code	Campaign Code Meaning/Name	Goal of Campaign	Materials (Web link/Screenshots)	Involvement of Young People in campaign design
2010 (Code:2)	No national campaign ≥ 3 weeks	-	No Reference Found	No Reference Found
2012 (Code:2)	No national campaign ≥ 3 weeks	-	No Reference Found	No Reference Found
2014 (Code:1)	No data reported	-	No Reference Found	No Reference Found
2016 (Code:1)	No data reported	-	No Reference Found	No Reference Found
2018 (Code:2)	**Clear the Air Campaign** No national campaign ≥ 3 weeks	Launched a campaign called "#ClearTheAir" to support new smoke-free legislation June – December 2017 Educate the populace about the NTC Act and the Right to protect themselves from Secondhand Smoke	https://youtu.be/wF0OKsO3z2A?si=tzZ4hpyC5iJp_Tm9 	Young People Involved in Campaign Implementation https://allafrica.com/stories/201706150097.html
2020 (Code:2)	**Breathe Campaign** No national campaign ≥ 3 weeks	Launched in 2018 for education on tobacco control laws and Preventing Tobacco advertisement promotion and sponsorship (TAPS)	https://www.thenigerianvoice.com/news/268042/breathecampaign-powerful-anti-tobacco-psa-showcases-the-si.html https://youtu.be/jRKQuotCCWY?si=TeTJueCKLsplXqac 	Young People Involved in Campaign Implementation https://x.com/tobaccofreeng/status/1039062749593128960?t=xvHNtxMQILVIDw656N5kiw&s=19 
2022 (Code:4)	**Smoke-Free Nollywood Campaign**	Launched in 2021 to promote movies that do not promote/project the use of tobacco products	https://ntcang.org/2024/05/27/censors-board-commits-to-supporting-a-smoke-free-nollywood/	Young People Involved in Campaign Implementation https://www.facebook.com/share/15NdheHxFA

	Don't Burn Their Future Campaign National campaign with ≤ 7 CTS (no TV/radio)	Launched in 2024 to promote a healthier future for young people, prevent youth access to tobacco products, and combat the increasing use of tobacco products among youths.	https://www.afro.who.int/photo-story/smokefreenollywood-fighting-tobacco-use-nigerian-films?fbclid=IwY2xjawHPsIVleHRuA2FlbQIxMQABHevlAG08MAPdISA1zZDvHUELWScHmw3mskU_Ca1l0Y7DYcqEdXRu4fsw-A_aem_DgnrCIVGktniUpvNyIIErA https://fccpc.gov.ng/blog-anti-tobacco-advocacy-campaign/#:~:text=The%20campaign%20is%20a%20part,of%20tobacco%20products%20among%20them. https://youtu.be/6wlJqFqzVbE?si=oNDkkbfvJZb5wXAL 	 No Reference Found

5.8 Reflection on the Theoretical and Philosophical Approach to Participatory Tobacco Control Health Communication in the Thesis

Tobacco control health communication in Nigeria based on the findings from the literature review, needs the involvement of young people in the design process, and not only during implementation. In reflecting on the position of young people in the larger social system (Social-Ecological system), I conceptualized that young people are not yet key actors in decision making (See Figure 6) even though they are considered a vital part. The role of policy, government, Non-governmental Organisations (NGOs) and other actors are vital, but a system that includes young people in key decision making for their health promotion needs to be considered.

Figure 6: Reflection on Tobacco Control Health Communication in Nigeria

The risk factors identified as associated with propelling tobacco use among young people (Oyewole, Animashaun and Chapman, 2018) showed interconnections that aligned with people, and their social environments. These environments could broadly be visualized through the social-ecological model (SEM) of health promotion (See Figure 5). The risk factors highlighted (See Figure 4) pointed to relationships that connected with the four levels of influence in the social-ecological model - individual (gender, Increasing age, psychosocial factors), interpersonal (peer influence, family conditions, psychosocial factors), community and society (media advertisement). Given the multifaceted and overlapping connections surrounding tobacco use among young people, approaching the thesis through the lens of the social-ecological model seemed well suited.

While the social-ecological model (SEM) was a key choice because of its wide application in multi-faceted interventions in health promotion and tobacco control (Rimer and Glanz, 2005; Aghdam et al., 2021; King et al., 2017; Kothari et al., 2007); other psychosocial theories like the Social Cognitive Theory (SCT), Theory of Triadic Influence (TTI), Trans-theoretical Model (TTM), Precaution Adoption Process Model (PAPM), and Communication for Development (C4D) by UNICEF were also considered.

The influence of psychosocial theories of behaviour change in health communication for various populations has been documented (Cho, 2012; Cross, Davis and O' Neil, 2017; Schiavo, 2014). However, given that the psychosocial factor is one of the categories (See Figure 4), focusing on it would mean dismissing other factors that could be important to the focal group.

The **Social Cognitive Theory (SCT)** is an interpersonal level theory that explores the mutual interactions in which personal factors, environmental factors, and human behaviour exert influence upon each other. The SCT postulates the likelihood of a behaviour based on three key factors: self-efficacy, goals and outcome expectancies (Rimer and Glanz, 2005). The SCT emphasizes the role of observational learning where people acquire new behaviours by watching others perform it, as well as behaviour being influenced by rewards and punishments (Bandura, 1991).

In the literature review, three studies made use of psychosocial theories like the Precaution Adoption Process Model (PAPM), the Trans-theoretical Model (TTM), and the Theory of Triadic Influence (TTI). **The Precaution Adoption Process Model (PAPM)** is an intrapersonal level model of behaviour change with seven distinct phases starting from lack of awareness to adoption/maintenance of a behaviour. The PAPM is mostly helpful when addressing issues like

recent hazards or newly available precautions (Rimer and Glanz, 2005). In the scoping review, PAPM was used in the context of tobacco cessation intervention with doctors to facilitate the use of the Ask, Advise, and Refer (AAR) model (Odukoya et al., 2020). **The Trans-theoretical Model (TTM) or Stages of Change** is also an intrapersonal level model of behaviour change characterized by five stages. The TTM suggests behaviour is on a continuum where an individual moves from pre-contemplation to contemplation, preparation, action, and finally maintenance of the desired behaviour (Rimer and Glanz, 2005). In the scoping review, TTM was also used in the context of tobacco cessation intervention (Owusu et al., 2017) to understand factors associated with quit attempts among participants in the Global Adult Tobacco Survey from fourteen LMICs. **The Theory of Triadic Influence (TTI)** is a theory that integrates multiple theories to form a comprehensive framework. TTI posits that three "streams of influence" (intrapersonal, social & environmental) at three hierarchical "levels of influence" (proximal, distal & ultimate) ultimately determine behaviour (Flay, Snyder, and Petraitis, 2009). In the narrative review, TTI was used in the context of understanding how the tobacco industry influences young people (Isip and Calvert, 2020) to promote the continuous use of tobacco products. In another study, TTI was used as a framework to explore the risk influences specifically associated with cigarette smoking among smokers aged 18 - 24 years (Egbe et al., 2017). Although the SCT and TTI both explain the varied factors and influences that could propel tobacco use, they did not offer a structure to fully consider co-constructing tobacco control health communication from the perspective of young Nigerians across multiple levels of interaction. The SCT and the TTI also seem to have a more psychological focus which may not be fully representative (See Figure 4). While the TTI shares similarities with the SEM, the SEM has a more relational/community outlook which aligns better with the direction of this thesis given the place of school settings (within communities) in tobacco control in Nigeria (see 5.5).

The UNICEF Communication for Development (C4D) model also seemed suitable given its focus on communication grounded in the participation of the focal community, but it is more dedicated to programme development in a humanitarian context such as, increasing demand for services and uptake of key family and community practices (UNICEF, 2019). However, the C4D approach aims to influence change at multiple levels similar to the social-ecological model (Individuals, families, communities, institutions, and policies/systems), which further validated the choice of the SEM for this thesis.

A primary goal for this thesis was to actively involve young people as key actors in informing tobacco control health communication and campaigns; as such, adopting a constructivist

perspective seemed better aligned. The constructivist perspective acknowledges that people play an active role in constructing their knowledge through social interactions between them and their environment; a perspective that also aligns with the theoretical focus in this thesis. The philosophical basis of this thesis is discussed further below (See 5.9).

5.9 Philosophical Orientation (Constructivism)

My philosophical orientation for this study stems from the perspective of the socio-ecological model. The individual though an entity on its own cannot be separated from the social environment. The individuals' perception, ideas, values, and beliefs influence their environment while the environment does the same to the individual. McLeroy et al. (1988) explained this as the interactive role between the individual and a larger social system.

In constructivism, knowledge is seen as generated based on past (socially constructed) experiences. Here, Knowledge is socially constructed as people interpret observations through their interpretive framework of prior knowledge, beliefs, and experiences. Knowledge is also created and developed collectively, as it depends on a community of individuals who communicate using a shared language and cultural framework (Saleem, Hausar and Deeba, 2021).

Knowledge production is seen as fluid, as knowledge is generated, discarded, or re-affirmed based on current perceptions that align with the individual or group. This means that individuals are in a constant (internal) interactive state to produce knowledge that can lead to a desired or acceptable change (Coghlan and Brydon-Miller, 2014).

Understanding participants' reality and meanings from their point of view is a central principle of constructivism, as such the methodology in constructivist research is geared towards encouraging participants to communicate or transfer their meanings in their unique way (Denicolo et al., 2016). This philosophical orientation guided the methods and data gathering for this thesis as participants were engaged in a process of discussion, negotiation, and reflection to gain insight into how their experience and social constructions informed their ideas, choices, and designs. Adopting a participatory approach also aided the application of this worldview as participants were able to produce knowledge that worked for them using methods that gave room for the expression of multiple perspectives in visual and textual forms.

Constructivism strongly aligns with action research (which also influences this thesis) as the key principle on which both function is an active search or construction of meaning in subjective and context-specific ways (Coghlan and Brydon-Miller, 2014; Trunk and Shapiro, 2007). Both encourage a reflective process of constructing meaning through which a group can collectively elucidate on an issue and decide on new ways of being and solutions to problems (Trunk and Shapiro, 2007). Hence, why I have added reflections from my observations and journey in this thesis including those from the groups I worked with which they shared verbally or in their diaries. The shared orientation to knowledge production between action research and constructivism creates an opening for intersubjective teamwork, re-envisioning of the world, and prioritization of practical impact as opposed to assumed neutrality and a distinct gulf between the researcher and participants in research (Coghlan and Brydon-Miller, 2014).

5.10 Researching with Young People

The views of young people have gradually taken centre stage in research that is associated with their wellbeing after the United Nations Convention on the Rights of the Child (UNCRC) in 1989. Research with young people has been shown to provide insights into how policies and interventions targeting them could be constructed to be more effective in the long run usually drawing from a strengths or rights-based approach; as they are now considered the most significant source of evidence on their lives and experience (Coyne and Carter, 2018). It is important to research with young people, especially in the area of tobacco control because it gives room for them to inform interventions that will target them, and aid in the identification of issues and options that may not ordinarily be considered without their input (Coyne and Carter, 2018; Tisdall et al., 2008) which is beneficial for society and the field of public health promotion. In addition, researching with young people can help ensure that words and language are suited for their peers (Kirby, 2004).

Studies with young people often engage methods that are deemed appropriate for the population and based on the goal of the study. Based on the goal of the study, young people could take the place of participants who are co-researchers or participants who are subjects on whom the research is conducted. For instance, some studies engage in testing interventions that could be useful to support and improve the health of young populations (Ajuwon and Brieger, 2007; Kebede et al., 2020; Malboeuf-Hurtubise et al., 2021; Odukoya et al., 2014), while some others opt for seeking the opinion of the target group directly (De Lange and Geldenhuys, 2012; Mannay et al.,

2019; Stehlik et al., 2020; Teufel-Shone et al., 2006) to justify future interventions. Studies that make use of data collection methods deemed appropriate for the age group; usually focus on their knowledge, thoughts, views, experience, and the meanings that they ascribe to the health issue or intervention associated with them (De Lange and Geldenhuys, 2012; Mannay et al., 2019; Pound et al., 2016; Stehlik et al., 2020).

Studies with young people often rely on school settings to serve as the site for data collection (Itanyi et al., 2020; Malboeuf-Hurtubise et al., 2012; Osuh, Fagbule and Olatunji, 2020, Wall et al., 2017). This is usually because the school is a key community-based setting where research and interventions can be implemented early to inform and support the health and well-being of young people (Ajuwon and Brieger, 2007; Pound et al., 2016; Winters et al., 2007). The school setting provides a structured and organized community-based setting in which persons from varied backgrounds can be reached in a single place; in addition, implementing interventions within a school add to an intervention's external validity as it is aimed at decreasing risks and adding protective factors within an environment where young people spend a great amount of their time (Winters et al., 2007). Though some studies have made use of other settings in their research (Dar and Chopra, 2024; Young and Barette, 2001); it is often to engage hard-to-reach groups of young people such as out-of-school children, migrants, and internally displaced persons so that their research focus is better addressed. Other settings such as community organisations, healthcare services, online environments, and youth groups may be preferred to a school given the sensitivity of an issue and the need to provide a more inclusive, flexible, and ecologically relevant space for participation (Brady et al., 2023; Fisher et al., 2002; Lundy, 2007). The use of the school setting in this study is considered best suited as it provides contact with a wide range of young people from varied backgrounds while providing access to a strategic group for prevention of tobacco use (See 3.5 for more details on the study sites)

The school setting has been used in several studies for tobacco use prevention (Campbell et al., 2008; Odukoya et al., 2014; Perry et al., 2009), sexual and reproductive health (Ajuwon and Brieger, 2007; Pound et al., 2016) and physical activity and nutrition (Prochaska and Sallis, 2004; Haerens et al., 2006) all of which have met with varied degrees of success. Studies in school settings usually require the active participation of students and make use of methods that are engaging and thoughtful to elicit information. Although, these methods are not limited to schools and students alone, they seem to be favoured by researchers researching with young people. Some of these methods involve the use of photography and photo-elicitation (Dockett and Perry, 2011; Mannay et al., 2019; Honkanen, Poikolainen and Karlsson, 2017; Poku et al., 2019),

drawing tasks (Mayaba and Wood 2015; Honkanen, Poikolainen and Karlsson, 2017; Poku et al., 2019), dairies (McIntyre, 2008; Mechelen, 2016), and writing tasks (Mannay et al., 2019, McIntyre, 2008; Poku et al., 2019). Other methods in line with participatory approaches employed when researching young people are storyboarding (Wall et al., 2017), photo-voice (McIntyre, 2008; Marshalsey and Sclater, 2019), film making and art making (Baumann, Lhaki & Burke, 2020; Donovan, 2016; Mechelen, 2016). Aside from engaging the use of creative research methods, studies often embed the use of these methods within spaces like workshops. The workshops are designed to make participants feel relaxed and encourage active participation (Bowen et al., 2013; Jessen, Mirkovic and Ruland, 2018) where participants are offered a safe space to explore and co-create (McIntyre, 2008; Davis et al., 2020).

The consensus behind using these creative methods for data collection leans towards giving voice to the health and social challenges of young people as stated by young people themselves using methods that are flexible, age-appropriate, creative, and inclusive in line in line with rights-based and participatory approaches. While this logic is plausible as it promotes a bottom-up and strengths-based approach (Coyne and Carter, 2018), it is usually accompanied by myriad ethical and methodological challenges (Coyne and Carter, 2018; Okello et al., 2013). For instance, the issue of pre-fieldwork consent being driven by gatekeepers and guardians rather than by young participants (Klykken, 2022) has been highlighted as a key reason to address consent as an ongoing process rather than as an accomplished task at a single point in time (Dockett and Perry, 2011; Klykken, 2022). Some of the aforementioned methods are used in this study during the data gathering process to facilitate active participation by participants within a school setting.

5.11 Key Frameworks of Yong People's Participation: In the Context of Participatory Approach and Rights-Based Ideology

The rationale for involving young people in health research is both ethical and practical. Ethically, participation respects children's rights to be heard (Fokala, 2011; Lundy, 2007; Shier, 2001). This right to be heard is often facilitated through the use of participatory approaches, which emerged from traditions of participatory research and emancipatory methodologies, emphasizing empowerment and social justice (Beresford, 2021). Practically, participation of young people enhances relevance and uptake of interventions (Brady and Graham, 2018). Participatory methods range from using youth advisory groups (Brady et al., 2023; Ozer et al., 2020) to creative

approaches like drawing (Kara, 2020; Poku et al., 2019), photovoice and digital storytelling (Groundwater-Smith et al., 2015; Marshalsey and Sclater, 2019).

Studies show that involvement of young people improves research relevance and outcomes, (Brady and Graham, 2018; Wilson et al., 2020). Young people's participation also benefits them directly. Young people gain influence over decisions affecting their lives, affirming UNCRC rights (Brady et al., 2023); they build communication, leadership, and critical thinking skills (Brady and Graham, 2018); while engagement improves understanding of health systems and fosters advocacy (NIHR, 2021).

Several frameworks have been recommended to provide a set of guiding principles that ensure that researchers remain committed to participatory approaches and that young people remain key actors in defining and deciding their health trajectory as a right. While participatory ideology promotes inclusion, critiques question whether participation is always meaningful or sometimes symbolic (Beresford, 2021). Power dynamics remain central as adult researchers often retain control, limiting genuine youth agency (Percy-Smith et al., 2023).

Rights-based approaches to research with young people are grounded in the principles of the UN Convention on the Rights of the Child (UNCRC)**,** which frames participation as a legal and ethical obligation rather than an optional practice. Three articles are particularly relevant to health research:

- **Article 12**: The right of the child to express views freely in all matters affecting them, with those views given due weight according to age and maturity.
- **Article 13**: The right to freedom of expression, including seeking, receiving, and imparting information and ideas.
- **Article 24**: The right to the highest attainable standard of health and access to health services.

These articles collectively establish that young people should not only be consulted but actively involved in shaping health research and services that affect them.

Participatory approaches aid the implementation of children and young people's rights. For instance, Fokala's Balance model (2017), Lundy's Model of Participation (2007) and Shier's Pathways to Participation (2001) strongly support children's rights. These models are widely used frameworks within and outside Africa for translating UNCRC principles into practice. While Lundy

and Shier's model are directed at enabling children's participation in the public space, Fokala's model is directed at furthering children's participation in the private space specifically in family decision-making processes.

The Fokala Balance Model of Child Participation is an African-developed framework that conceptualizes participation as a dynamic balance between children's rights, protection, and adult responsibility**,** rather than a linear transfer of power from adults to children. The balance model is aimed at protecting and advancing children's right to participate in family decision-making under the premise that children do not hold the same status as their parents and that the traditional and customary authority of parents as heads of the family should be respected. The model recognizes that children's role in decision-making varies with issues at hand and with maturity. The model identifies that children can take on more significant roles in decision-making at certain points while in others they participate as co-actors, making decisions jointly with their parents. In all cases, the model emphasizes the responsibility of parents to provide fair guidance and support to help children reach appropriate decisions. Fokala's model also points out that the state must play a passive role in family life unless there is a compelling justification and a clear protective purpose for doing so. This model integrates the principles of the Lundy Model to create a model that facilitates children's right to participation in private spaces (family units).

The Lundy model provides a way of conceptualizing a child's right to participation as laid down in Article 12 of the UNCRC. The model emphasizes the rights through four key elements;

1. **Space** – Provide safe and Inclusive space to form and express views
2. **Voice** – Provide appropriate information and facilitate expression of views
3. **Audience** – Ensure that views are communicated to someone with the responsibility to listen
4. **Influence** – Ensure that views are taken seriously and acted upon where appropriate

This model emphasizes structural conditions for meaningful participation**,** focusing on rights rather than tokenistic involvement. In health research, Lundy's principles have guided the design of Young People's Advisory Groups (YPAGs)**.** For example, Brady et al. (2023) describe how a YPAG co-produced an evaluation process, demonstrating that when space, voice, audience, and influence are embedded, young people perceive their contributions as valued and impactful.

On the other hand, Shier's framework offers a five-level progression for participation:

1. Children are listened to.
2. Children are supported in expressing views.
3. Children's views are taken into account.
4. Children are involved in decision-making processes.
5. Children share power and responsibility for decisions.

Each level in Shier's Pathways includes openings, opportunities, and obligations**,** enabling researchers to assess and improve participatory practices. While both models are grounded in the principles of the United Nations Convention on the Rights of the Child (UNCRC), Lundy's model is primarily rights-driven and conceptual, whereas Shier's Pathways to Participation is pragmatic and action-oriented (Lundy, 2007; Shier, 2001). Lundy's model emphasizes the structural conditions required for meaningful participation (space, voice, audience, and influence) while Shier provides a practical roadmap for progressing participation through increasing levels of shared decision-making.

In practice, Lundy's model is frequently applied in the design of participatory structures, such as Youth Advisory Boards, to ensure that young people's voices are heard and taken seriously (Brady et al., 2023). In contrast, Shier's framework could be used to evaluate and monitor levels of participation, offering organisations a tool to assess commitment and accountability (Shier, 2001).

5.11.1 Young People's Involvement in Health Research: Rights, Culture, and Context

The involvement of young people in sensitive health research issues within low resource settings is critical. This is because environmental context and intersectionality adds complexity, as age intersects with other social identities, influencing participation experiences and the way participatory methods are engaged (Mannay et al., 2019; Poku, Caress and Kirby, 2019).

Working with young people on sensitive issues such as mental health, sexual health, or tobacco control requires nuanced approaches to rights, cultural sensitivity and power dynamics. This is because Integrating rights, culture, and context could ensure that participation is ethical, inclusive, and transformative (Fokala, 2017; Poku, Caress and Kirby, 2019). For instance, upholding UNCRC Article 12 by creating safe spaces and ensuring informed consent and assent supports the UNCRC and the African Charter on the Rights & Welfare of the Child (ACRWC)

simultaneously, ensuring that children's rights are protected and that parents/guardians' views are respected.

Rights-based approaches operationalized through Fokala, Lundy and Shier's frameworks, provide robust foundations for involving young people in health research within and outside Africa. When combined with cultural sensitivity and contextual adaptation, these models enable participation that is not only meaningful but empowering, particularly in sensitive research topics.

5.12 Engaging Creative Methods in Research with Young People

Research with young people often use creative methods, as they facilitate active and inclusive participation. According to Kara (2020), creative research methods is an umbrella term for research methods that can be categorized into five key domains: arts-based research; embodied research; research using technology, multi-modal research (mixed-methods research); and transformative research frameworks such as participatory, feminist, community-based, queer and asset-based methodologies. These five areas are not mutually exclusive as research can incorporate two or more (Kara 2020) to answer a research question more effectively.

Arts-based research (ABR) methods encompass drawing, diaries and journals, mapping, photography, poetry, dance, theatre, writing etc. These research methods can be used at different stages in the research process or throughout the research process (Merriam and Tisdell, 2016 p65). While there are arguments based on the artistic competence of people who wish to use artistic techniques, other schools of thought suggest that arts-based methods can be used by researchers if the method is appropriate for the research and its setting (Kara, 2020). Like Kara (2020), Merriam and Tisdell, (2016) also address these opposing schools of thought by suggesting that the focus should be on whether the purpose of using ABR is as a data collection/presentation method or as a method to study artists /artistic process. Again, these methods could be used as tools for eliciting data with participants and/or objects for analysis (Mannay et al., 2019).

The "draw and write" method has been highly advocated for working with children without the researcher being a skilled artist (Kara, 2020 p30). This technique has also been found useful when gathering data in a classroom (Kara, 2020 p111, Wall et al., 2017). In drawing, participants are given a stimulus for ideas which could be a drama performance, video recording, or even discussion before being asked to draw and write about a specific issue (Kara, 2020 p111). Drawing as a research method has been used to work with children and young people to

encourage creativity and participation (Mechelen, 2016; Wall et al., 2017). More details on the creative methods used in this thesis are provided below.

5.12.1 Drawing

The foundation of drawing in art therapy has been credited as a core reason why it has gained wide development as a research method in the health and education fields (Ward and Shortt, 2018). Drawing is often used in research with children as it is easy to administer (Kara, 2020). Drawing as a method has been argued to work best when used in conjunction with other research methods like interviews (Guillemin, 2004; Guillemin and Drew, 2010). Due to its use of written words, drawing is associated with issues of analysis and continued dependence on words for analyses of visual research methodologies (Ward and Shortt, 2018). While this is a succinct point, it mostly depends on whether the drawing is the object of analysis/investigation or a tool for eliciting information (Kara, 2020; Mannay, 2019) as the resulting data can be analysed quantitatively and qualitatively (Wetton and McWhitter, 1998).

In small-group designs, drawing has been used as a form of icebreaker to reduce formality (drawing at the beginning of an interview), stimulate conversation (drawing to bring the interview to a close), and enhance discussions about issues that are difficult to describe verbally (Ward and Shortt, 2018; Guillemin, 2004). The stimulation of conversation and discussion gives room for the sharing of collective meanings, emotions, and experiences (Ward & Shortt, 2012, p. 439) including discussions that are generated by the group participants and the researcher rather than by the researcher alone. The shared generation of discussions by researchers and participants has been argued to encourage reflections that challenge the unspoken assumptions held by individuals regarding particular ‘truths' (Ward and Shortt, 2018).

In drawing, participant-led or participant-produced drawings are those images produced (often hand-drawn) by the participants that the researcher is working with. There are three main distinctions in the way participant-produced drawing methods are employed; context, process or technique, and analysis (Ward and Shortt, 2018) which influence whether the drawing serves as an object for analysis or a tool for elicitation. Across various disciplines, three participant-produced drawing techniques are being employed: structured, semi-structured, and unstructured techniques. Structured participant-led technique is the process where the participants are asked to populate, modify, or label a drawing in response to a series of questions (Meyer, 1991). While

this technique offers more comparative ability as all images share a similar framework from which the analysis can begin; the structured approach means high involvement by the researcher (Ward and Shortt, 2018).

Drawings that are produced as part of a collaborative process of inquiry must be interpreted by the participants themselves (Ward and Shortt, 2018). The “drawings are both products and processes”, as they give a snapshot of the participant’s feeling at a particular point in time (Guillemin, 2004) and can only be correctly interpreted by the participant themselves. The sense-making process can be carried out verbally in a group setting, as a form of reflective log or a draw and write style exercise. The relationships, the discussions, and the methods all come with a story that makes the process worth learning from and this is because the visual materials produced by participants are often predicated on the elicitation interview. The visual images produced, thus form part of a wider narrative that directs their framing (Mannay, 2016 p1). The vital feature is that the visual artefacts are not analyzed in isolation but must be informed by the voice (either written or spoken) of the person who produced the work (Ward and Shortt, 2018).

5.12.2 Diaries

A diary is a research tool that requires users to make regular records of their daily activities and experiences (Bowling, 2002). The use of individual diaries can be initiated by the researcher to enable the participants to record data; this is referred to as solicited diaries and is different from “pre-existing or unsolicited diaries” commonly used by historians (Kara, 2020 p106).

Diary as a research method is largely dependent on the research question of the study, frequency in reporting, number of items to report, time points in reporting, period in reporting, momentary or retrospective and the delay allowed before reporting (Janssens et al., 2018). This research method necessitates a good level of willingness and commitment from the participants (Kara 2020 p106). It also requires balancing challenges like fatigue which can occur when the diary period lengthens making participants weary and possibly resulting in becoming less thorough in reporting (Wiseman, Conteh and Matovu, 2005).

Diaries have been used when working with children and young people (Mechelen, 2016; Andersen et al., 2004) to document their experiences and decision-making processes. Diaries have also been used as a tool to limit recall bias or inaccurate recall of events as well as to enable researchers to reflect and document their research journey (Kara, 2020).

5.12.3 Group Discussions and Observing Participants

Discussion is vital when working with a focal audience. The process of discussion enables the group to share ideas and explore and debate different view and understandings. Group discussion is a means of gathering data from several people who usually share common experiences, and focus on their shared meanings (Payne and Payne, 2011). These group discussions can be facilitated by the researcher who helps to provide a reflective space for participants to share their views (Ritchie et al., 2014).

Group discussion is regarded as a social research method rather than an individualist one as it attempts to reflect the perspective of the people in a group. While group discussion is ongoing, observation is also vital as this enables the facilitator to gain knowledge and understanding, including seeking clarity from the group regarding emergent or divergent issues raised (Payne and Payne, 2011; Ritchie et al., 2014). Observation also allows the facilitator to grasp the opinions and ideas that are communicated including underlying opinions and feelings that are expressed or modified through collective group interaction (Payne and Payne, 2011).

Studies that engage participatory activities often engage group discussion and participant observation as part of the research methods employed (McIntyre, 2008; Mechelen, 2016). This dual process of group discussion and observation gives room for the facilitator and the participants to work together to create meaning and build understanding while addressing issues of concern. The process of discussion is enhanced when objects like diaries, drawings, photographs, and other artefacts created by the participants are introduced (Kara, 2020 p.107). The introduction of artefacts provides further opportunities for shared meanings and understanding to be accessed which may not be readily articulated through written or talk-based methods (Kara, 2020 p.108).

5.13 Summary

This chapter has shown the gaps in the active participation of young people in tobacco control in Africa and Nigeria. It has laid a foundation for the theoretical and methodological underpinnings for this thesis and shown why young people should be positioned as key actors in designing tobacco control health communication. The next chapter will focus on the methodological choices

made in the thesis including the use of a participatory approach in the qualitative study design, recruitment from two schools contextually informed by the private and public school system in Nigeria; the use of group activities in co-design workshops to facilitate active participation and co-construction by participants and the sequential process of thematic analysis engaged.

CHAPTER THREE

METHODOLOGY AND METHODS

3.0 Introduction

The goal of this study was to determine and design targeted health communication for tobacco use prevention with young people in Nigeria, by utilizing a participatory approach. The involvement of focal populations (like young people) in determining and designing health communication for tobacco use prevention is vital (Cavallo et al., 2019; Mansour et al., 2023). Their involvement is vital to ensure communication relevance, clarity, and relatability within a context (Perl et al., 2015). The involvement of young people in Nigeria has been established in the literature review (See Chapter 2) as lacking in informing tobacco control health communication design. This lack of involvement has informed the methods and methodology adopted in this thesis. This thesis explored the use of a qualitative methodology to determine and design anti-tobacco communication informed by young people for young people to aid targeted anti-tobacco campaigns in Nigeria.

This chapter provides details on the study design, methodological approach, and sampling, including the ethical considerations unique to the study. The chapter highlights how a co-design process was used to facilitate knowledge generation to inform tobacco control health communication with young people. It details how the phases of the co-design process was conducted using participatory and creative methods to foster teamwork and social interactions that produce shared knowledge. This chapter also addresses the principles and phases of co-design and the use of creative methods to facilitate data gathering and analysis with young people. It provides details on how the study incorporated co-design principles in engaging with gatekeepers, and other stakeholders during the process of data gathering with young people in two senior secondary schools in southern Nigeria. Finally, this chapter concludes with how the engagement of a reflexive stance to data gathering and analysis aided key ethical considerations.

3.1 Qualitative Study Design

A qualitative study design was adopted for this study. Qualitative study design entails asking the kinds of questions that focus on the why and how of human communication or interactions (Agee, 2009); which would aid the aim of involving young people to inform targeted anti-tobacco campaigns in Nigeria.

Qualitative research is vital to public health as it explores and provides deeper insights into real-world problems and enables the understanding of people's experiences to facilitate interventions (Allen, Kelly and Hatala, 2024). In health research, qualitative study design provides a system of inquiry that aims to address the understanding of human health, health behaviours, and practices or health services (Green and Thorogood, 2018). The aim is to utilize this understanding to inform health-related issues that cannot be wholly addressed by using a quantitative approach. Qualitative study design also offers a system of inquiry focused on answering questions on what happens, why, and with what effects at different levels (Agee, 2009) which allows for the involvement of study participants in depth. This is because qualitative research is characterized by engagement of research participants within their natural setting often extending over a prolonged period (Creswell and Creswell, 2018). Given the prolonged period necessary for qualitative research, the researcher is also involved as a key instrument in the research necessitating reflexivity on how the role of the researcher informs or impacts the study (Creswell and Creswell, 2018). This is aimed at providing a detailed account of any subjective lens that may have influenced the study.

Having established the lack of involvement of young people in tobacco control health communication design, utilizing a study design that facilitated group participation in organised but flexible steps seemed appropriate. This study adopted a qualitative research approach with roots in participatory design to accommodate the in-depth, collaborative input of the focal group to inform tobacco control health communication practice and policy in Nigeria.

3.2 Participatory Research as a Methodological Approach

The approach to this study was primarily aimed at working with young people in a structured setting (school) while ensuring that they were actively sharing power in the research process and not merely positioned as research subjects. Participatory research refers to a research-to-action approach that stresses direct and significant engagement of local priorities and perspectives (Cornwall and Jewkes, 1995). A participatory approach was adopted in this study as it is an umbrella that houses a host of research designs, methods, and frameworks (Cargo and Mercer, 2008) including participatory design and participatory action research (Vaughn and Jacquez, 2020).

This research seeks to engage individuals whose contribution draws on their personal lived experience rather than professional expertise to promote relationship-building, leadership sharing, collaboration and the thriving of young people and the community they belong to (Reason and Torbert, 2001; Vaughn and Jacquez, 2020). In addition, this research seeks to facilitate generation of knowledge and results that can be directly translated into community and non-academic settings and contribute to tobacco use prevention in Nigeria and similar contexts. As participatory approach facilitates improved research value and rigor due to the integration of personal and professional experiences (Balazs & Morello-Frosch, 2013; Bush et al., 2017; Cargo & Mercer, 2008; Warren et al., 2018), this integration could support the development of a mutually beneficial and robust partnership that ensures young people are considered vital partners in tobacco control in Nigeria. While the involvement and impact of non-governmental organisations and tobacco control bodies have been evident in ensuring that the Nigerian government takes a more active role in tobacco control policy development and implementation (Udokanma et al., 2021); the input of young people is still lacking given that they are reportedly the target of tobacco companies (ATCA 2016, Iyiola et al., 2008). This study utilizes the tenets of participatory research in a participatory design process to facilitate the involvement of young people in tobacco control health communication design, to ensure that their views are constructively represented as this has been noticeably absent in Nigeria's tobacco control efforts.

3.3 Participatory Design

Participatory design is regarded as a research methodology broadly characterized by three key stages, namely - initial exploration, discovery processes, and prototyping (Spinuzzi, 2005). These key stages are a broad description what could be found within a participatory design study (See Figure 7). While other authors have described participatory design with five stages (Chan, 2018; van Hierden, Dietrich and Rundle-Thiele, 2021) or six stages (Hagen et al., 2012), the three key stages described by Spinuzzi (2005) are consistently featured within the varied stages. The difference between the three-stage, five-stage and six-stage approach is that Spinuzzi's three-stage approach does not include stages for implementation and evaluation. The three basic stages offer flexibility that gives room for heavy direct interaction between designers and users in a process that is collaborative, empowering, democratic, creative, and chiefly reliant on the tacit knowledge of the users (Spinuzzi, 2005) though it is more inclined to the participatory design of computer technologies within workplace settings (van Hierden, Dietrich and Rundle-Thiele, 2021). Participatory design is said to have originated in the early 1970s in Scandinavian work settings where it was used as a means to democratically enable workers to define the shape and scope of new technologies for their workplace (Simonsen and Robertson, 2013; Spinuzzi, 2005). Engaging participatory design ensured that the voices of workers were reflected in the technologies they would use in their workplace. Thus, it strongly acknowledges the inclusion of the shared knowledge of study participants in tobacco control health communication as they would be the end-user or principal audience (Simonsen and Robertson, 2013; Spinuzzi, 2005). As end-users, young people in this study take the position of expert of their needs jointly working with the researcher. In doing so, they can co-design systems, strategies and materials that will better serve them within their social context and environment (Hagen et al., 2012; Spinuzzi, 2005). This approach aligns with the goal of this study as it supports strong democratic inclination towards (end users) young people's knowledge ensuring that their knowledge informs the design of interventions and go beyond consultation to empowerment (Spinuzzi, 2005; Vaughn and Jacquez, 2020).

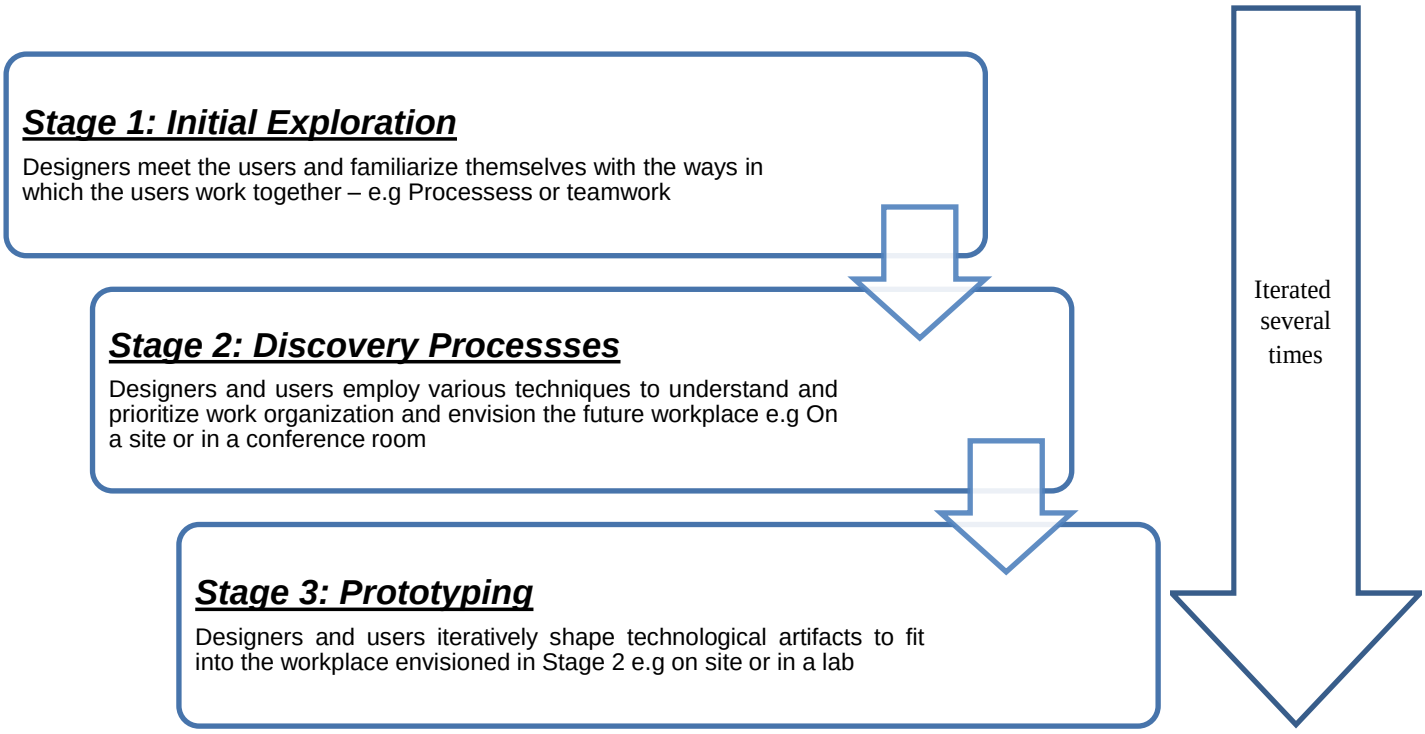


Figure 7: The Key Stages in Participatory Design (Spinuzzi, 2005)

3.3.1 Participatory Design and Participatory Action Research (PAR)

Participatory design has its methodological roots in participatory action research (Spinuzzi, 2005), and PAR is a form of action research or practitioner research (Green and Thorogood 2018; Merriam and Tisdell, 2016). Several authors have given varied definitions of PAR (Chevalier and Buckles, 2019; Merriam and Tisdell, 2016; Vaughn and Jacquez, 2020) but they all point to the PAR being a research approach that seeks a form of social change.

Participatory Action Research (PAR) involves practitioners and/or researchers and community members working together to challenge power relations to inform change in their communities (Merriam and Tisdell, 2016). According to Vaughn and Jacquez (2020) PAR follows a cyclical progression of action research and collaboration, fostering co-generative learning among

participants to solve problems. This outlook mirrors that of Green and Thorogood (2018) who acknowledge the “cyclical or spiral” nature inherent in PAR where the process of addressing one topic could give rise to another thereby restarting the process of planning, observing, acting, and reflecting on feedback. While PAR offers a unique research approach that is suitable and aligned with the philosophical disposition of health promoters (Merriam and Tisdall, 2012) like me, similar to other qualitative designs, PAR process is linked to a range of practical, strategic, ethical, and personal issues (Kindon, Pain and Kesby, 2007; Leavy, 2022; Locke, Spirduso and Silverman, 2013) necessitating the researcher to be reflexive in clearly identifying any bias, values, professional and personal background such as gender, history, culture, and socio-economic status (Creswell and Creswell, 2018; Leavy, 2022). In addition, PAR also requires extensive time and financial commitment (Chevalier and Buckles, 2019; McIntyre, 2008) that may not be fully feasible for the duration of a 3-year PhD thesis aimed at determining and design for tobacco use prevention in a setting where tobacco smoking is socially unacceptable for young people. However, given the methodological roots of participatory design in PAR, studies that involved working with young people within a school setting using a PAR approach were also considered to inform the methodological choices in this thesis.

It is therefore pertinent to point to my role as a tobacco control advocate and health promoter in Nigeria who focused on tobacco smoking prevention among young people through the school setting (See Sub-section 1.4). This role strategically placed me as a middle-woman between tobacco control bodies and educational institutions for young people in communities with the goal of smoking prevention to reduce the need for smoking cessation programmes. In this light, adopting a research approach that allowed power or decision-making to be a shared function all through the research process challenged my professional ties, and assumptions. This was because I most often solely worked within the agreement presented by the tobacco control body and the educational institution which had little or no input from the young people in focus. My role as a health promoter dedicated to engaging a more participatory approach to research also informed my philosophical stance, method choice, and approach to using the health promotion theory in this study. The research process and outputs from this study would therefore be constantly subjected to the characteristics of participatory design as already highlighted.

3.4 Co-Design

Participatory research encompasses research designs, methods, and frameworks that use systematic inquiry in direct collaboration with those affected by an issue for action or change (Cargo and Mercer, 2008). One such methods of systematic participatory inquiry is participatory design (Vaughn and Jacquez, 2020) from which co-design originated (Bjerknes, Ehn and Kyng, 1987; Thabrew et al., 2018). Co-design is a specific instance of co-creation involving collective creativity across the whole span of a design process; while co-creation is a broad term applied to any act of joint creativity by two or more persons which could be physical, metaphysical, or even spiritual (Sanders and Stappers, 2008). Co-design is a collaborative design approach that involves designing with people rather than designing on their behalf (McKercher, 2020).

"Co-design is a process not a product" (Thabrew et al., 2018). Co-design involves sharing power, prioritizing relationships, using participatory means, and building capacity" (McKercher, 2020 p.14) in the creative process with designers and people not trained in design working together in the design development process (Sanders and Stappers, 2008); which strongly aligns with the participatory design and methodological approach for this study.

In health studies, co-design is classified as joint creativity across the entire design process (Sanders and Stappers, 2008), which can lead to the development of interventions that are more collaborative, satisfying, and beneficial to potential users as researchers, designers, and users have varied levels of involvement at varied stages, while remaining part of the team (Thabrew et al., 2018). According to Thabrew et al. (2018), participants in co-design not only test a product or service, give their opinion, or share their experience on an already pre-conceived product or service but instead, are involved in mutually discovering and articulating their needs and jointly discovering and constructing solutions. This process of mutual discovery and construction of solutions inherent in co-design makes it appropriate for this study to determine and design targeted health communication for tobacco use prevention with young people in Nigeria.

Thabrew et al. (2018) suggested some key considerations that encompasses the three key stages highlighted by Spinuzzi (2005) when co-design is implemented across the complete development of a new intervention; as is the case in tobacco control health communication with young people in Nigeria. Thabrew et al. (2018) suggests that co-design usually begins with the use of superficial enquiries to engage participants, before moving to more rigorous generation of ideas using detailed toolkits, narrows into the development and evaluation of prototypes and ends with a more targeted post-design evaluation. Both suggestions were considered and adapted in this

study to suit the research context and available resources (Slattery, Saeri, and Bragge, 2020) and ensure that participants were actively involved in the co-design process.

As a participatory design approach, co-design is characterized by underlying principles that direct the co-design process from transactional (producing outputs like products) to transformational (producing outputs and social outcomes); these principles according to McKercher (2020) are shown in the figure below (See figure 8). These overarching principles contribute to making co-design appropriate for studies geared towards designing for change as it facilitates a research process that is inclusive, participatory, and ethically sound.

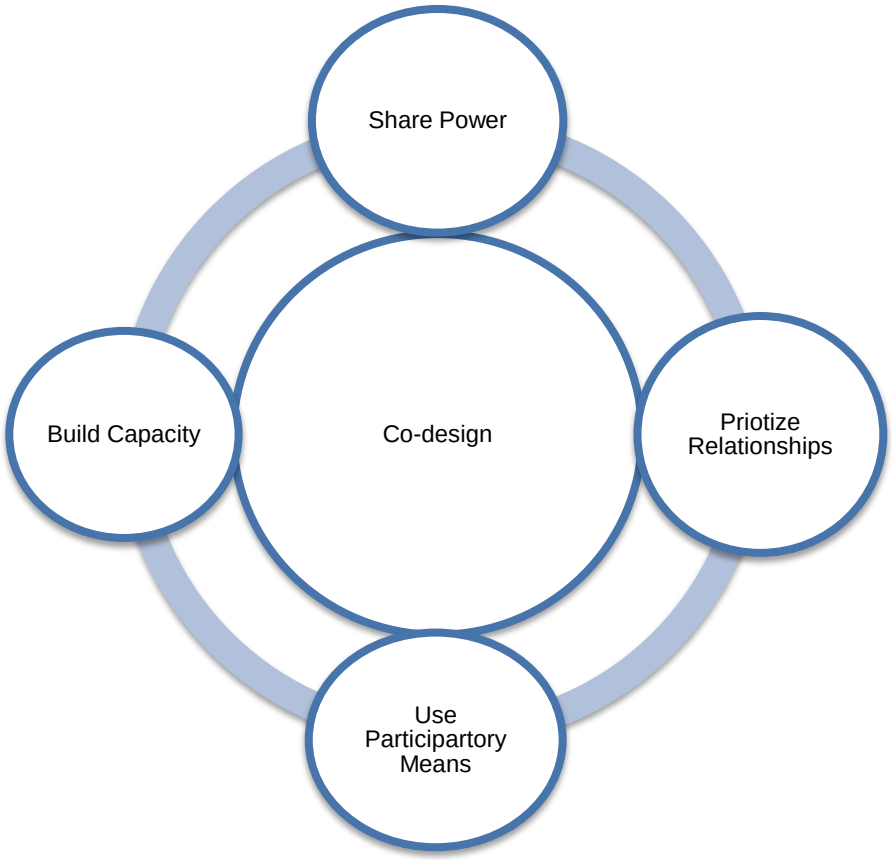


Figure 8: Principles of Co-design (McKercher, 2020 p.14)

In other to provide further clarity as to the approach in this study, participatory design would be conceptualized as a house where qualitative design is the foundation. The house consists of four rooms (stages in co-design) with connecting doors that are the tenets associated with co-design and participatory approaches. In the rooms, I and participants in the study can construct knowledge and designs using creative and participatory methods. What this approach affords us, is the flexibility to work together using varied methods with the understanding that the research process is time bound which is a difficult balance to attain if the cyclical process of (action and reflection) PAR was adopted.

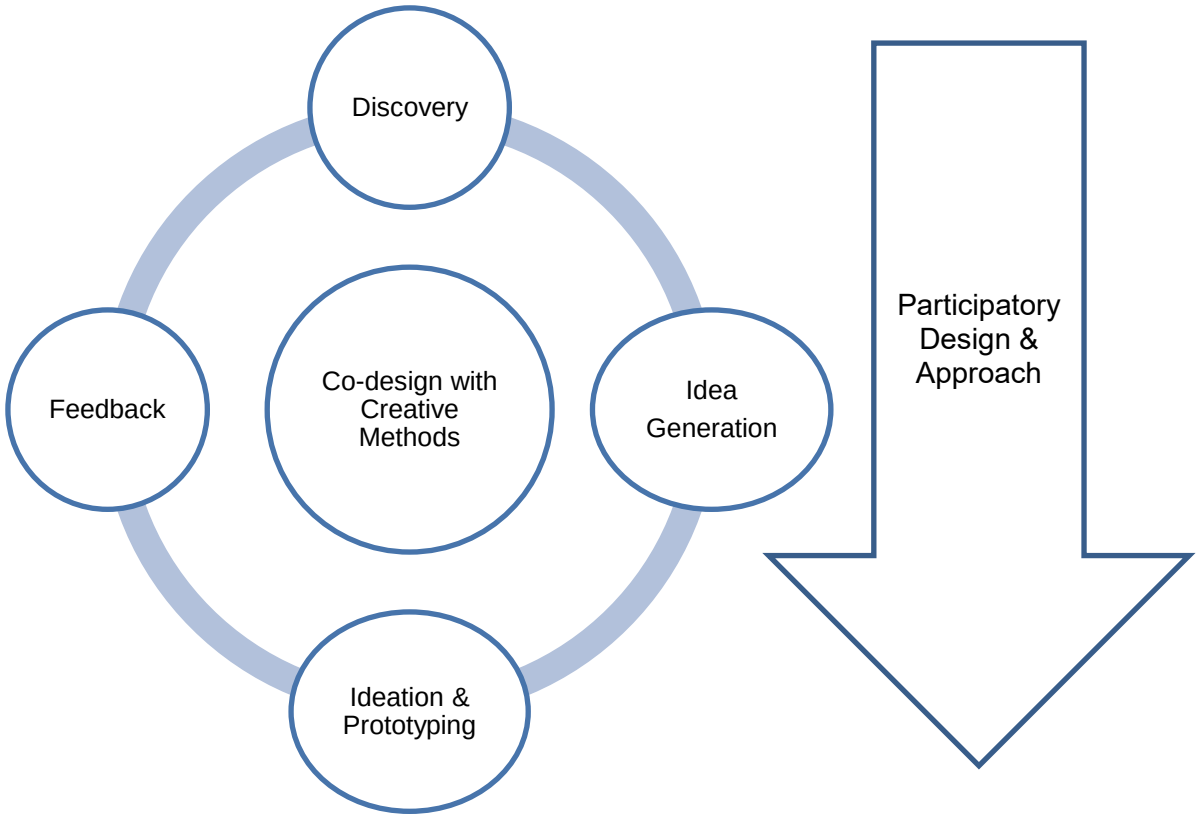


Figure 9: Research Design & Approach in the Thesis

3.4.1 Overview of Some Co-design Studies in Health Research

Co-design has been employed as a research approach in several health studies. These studies are mostly geared toward improving health service design and delivery (Boyd et al., 2012; Bowen et al., 2013; Graffigna et al., 2021; Hetrick et al., 2017; Jessup et al., 2018; Ward et al., 2018) and program or product design (Austin, Dijick, and Drossaert, 2020; Davis et al., 2020; Hierden, Dietrich and Rundle-Thiele, 2021; Mechelen, 2016) through meaningful end user or stakeholder participation. The health service design often focuses on stakeholders within clinical settings (Boyd et al., 2012; Hetrick et al., 2017; Jessup et al., 2018) while the program or product design focuses on other end users within non-clinical or clinical communities (Hierden, Dietrich and Rundle-Thiele, 2021; Jessen et al., 2018; Mechelen, 2016) both of which utilize methods that facilitate participation of the key groups in the design process. The co-design steps and activities utilized often depend on the key groups (Bowen et al., 2013; Boyd et al., 2012), health issue (Boyd et al., 2012) and socio-cultural context (Cockcroft et al., 2022; Graffigna et al., 2021).

While co-design offers significant benefits in health research (Boyd et al., 2012; Thabrew et al., 2018), there are also concerns about how it should be evaluated (Esmail, Moore and Rein, 2015; Peters et al., 2024; Slaterry, 2020) given the diverse approach to co-design in available literature (Slattery, Saeri, and Bragge 2020). In their review, Slattery, Saeri, and Bragge (2020) noted that the lack of a single consistent conceptualization of 'co-design' made it difficult for them to highlight and comprehend the relevant literature they examined. While this is a testament to the flexibility and adaptability of a co-design process, it also presents a challenge for budding researchers like me. The main challenge would be how to conceptualize co-design in a way that stays true to the intended purpose while bearing in mind the focal group, the research context, and the most appropriate methods for data gathering and analysis. The eight criteria highlighted by Slattery, Saeri, and Bragge (2020) to facilitate better research to involve end-users in co-design provides a good framework with which to address these concerns as it highlights the need to consider sufficient time and financial resources in co-design; both of which significantly contributed to the methodological choices in this study.

In Nigeria, there is no record of co-design being engaged with respect to designing tobacco control health communication interventions with young people. But, it has been employed within the area of higher education delivery to improve educational materials and teaching strategies (Rinnert et al., 2021), improve adolescent sexual and reproductive health (Cockcroft et al., 2022) and development of mini digital games to facilitate learning for young people (Agbo et al., 2021).

Co-design studies, being a participatory process with young people, often make use of workshops. The use of workshops is usually aimed at facilitating a relaxed atmosphere for active participation and creativity (Bowen et al., 2013; Davis et al., 2018; McIntyre, 2008). The location of the workshop varies depending on the study context. For instance, the study by Bowen et al. (2013) made use of a conference facility in a well-known shopping centre to facilitate participation by young people and their parents at a location all parties were familiar with. On the other hand, the study by McIntyre (2008) and Mechelen (2016) used the school in the community where participants were recruited.

In the context of this study, co-design was employed with young people in workshops to facilitate their qualitative input in tobacco control health communication design to inform campaigns (interventions) that would better resonate with their peers and would be more beneficial for their health and well-being in Nigeria. This was done by adapting the stages of co-design as highlighted by Spinuzzi (2005) and Thabrew et al. (2018) to suite the research context and focus. The study adopted recommendations from co-design and participatory research studies that involved working with young people in a school setting that also used creative methods (McIntyre, 2008; Mechelen, 2016; Wall et al., 2017).

3.4.2 The Phases of Co-Design

The phases of co-design vary with different studies, but the process is often similar. The process of co-designing usually starts with relationship building or re-establishing relationships to prepare a conducive environment for co-designing (McKercher, 2020; Spinuzzi, 2005) where the researcher learns about the people, the setting, and the vital processes within the setting or community. This leads to the recruitment of participants or co-designers and the introduction of the aim for the design (McKercher, 2020; Mechelen, 2016). This is followed by a process of co-deciding on the issues surrounding the topics that are of local relevance called discovery processes (Spinuzzi, 2005; Thabrew et al., 2018). There is also the process of generating ideas (Mechelen, 2016; Thabrew et al., 2018), ideating and prototyping ideas to co-decide on the best option(s) (Chan, 2018; Spinuzzi, 2005; Thabrew et al., 2018), testing the designed option to gain feedback to refine and adapt it (McKercher, 2020; Thabrew et al., 2018) and finally a post design evaluation phase (Thabrew et al., 2018). While major feedback on the final solution is left till the end, feedback is intertwined within the process to aid a smooth design process especially when working with children and young people (Mechelen, 2016).

With the aforementioned phases in mind for the development of a new intervention, the co-design process in this study adopted four main phases: discovery, idea generation, ideation & prototyping, and a feedback phase to evaluate potential prototypes as well as the co-design process. Although the phases are similar to those highlighted by McKercher (2020) the latter took into consideration the processes that usually precede a successful co-design process. According to McKercher, the five phases of co-design are: building the conditions, Immerse and align, discovery, design, and lastly, test and refine. The first two phases highlighted by McKercher (2020) has been given different names by other authors. Mechelen (2016) in his work with school children referred to this as introduction and sensitization while Boyd et al. (2012) referred to them as engagement and planning. Despite the different names, literature suggests that co-design being a participatory method requires a great level of relationship building and pre-planning before the actual design phase. Slattery, Saeri, and Bragge (2020 in their systematic review on what is co-design argued that the processes preceding the design phase that capture how the co-design team arrived at a shared goal (or problem statement) is key in defining a study as co-design as this most often determines the trajectory of the design process with the focal group. The study by Mechelen (2016) shows this phase distinctly as it gives a clear approach (reflection, discussion, and visualization) on how to define the problem statement with young participants after the introductory and sensitization phases.

3.4.2.1 Discovery

The discovery phase of co-design is strategically focused on exploring and understanding the mindset of the focal group by using participatory activities. This phase is highly dependent on the focal group, environment, and context. The researcher enters the environment of the focal group with an open mind giving room for shared knowledge and eventually shared goals. Boyd et al. 2012 applied this in their breast cancer screening service study by utilizing patient journey mapping and an experience-based survey. Similarly, Davis et al. (2020) made use of workshops with vulnerable young people to address pornography literacy where they used a range of creative activities like Lego collage, community mapping and drawing. On the other hand, Graffigna et al. (2020) made use of a quantitative descriptive survey and co-design workshops to achieve the same among caregivers. It is pertinent to note that both Boyd et al. 2012 and Graffigna et al. (2020) worked with adults in a healthcare setting while Davis et al. (2020) worked with young people in a community setting.

3.4.2.2 Idea Generation

This phase is characterized by the use of participatory activities to gather a wide range of ideas which is later narrowed down to a select few. Boyd et al., 2012 referred to the wide range of ideas as generating “blue sky ideas” which is aimed at ensuring no idea within the participating team is left uncovered.

The techniques used to generate ideas mainly depend on the focal group. Mechelen, 2016 suggested brainstorming, brain-writing, and game-storming as some recommendations for working with young participants in schools. Brainstorming, brain-writing and game-storming are complementary idea generation group activities that involve participants thinking and discussing about concepts to generate ideas and write them. Brainstorming involves verbally sharing ideas in a free-flowing discussion, encouraging spontaneity and collective building of ideas, though it can be influenced by group dynamics. Brain-writing offers a more structured and inclusive alternative by having participants generate ideas individually in writing, reducing social pressure and enabling equal contribution. Game-storming extends these approaches through playful, game-based activities that use rules, visuals, and interaction to stimulate engagement and creativity. These activities are suggested to facilitate group participation with participants within same school class who have some level of relationship with one another (Mechelen, 2016).

The process of narrowing down a wide range of ideas is achieved by assessing the ideas to see if they meet a co-decided set of criteria (McKercher, 2020), a defined goal, or a problem statement (Mechelen, 2016).

3.4.2.3 Ideation and Prototyping

This phase is characterized by developing potential solution concepts from generated ideas and designing prototypes; these prototypes are sometimes referred to as turning ideas into actual products and services (Brown and Wyatt, 2010). Potential solution concepts are created to investigate which would work best for the focal group and would be designed as a prototype. It is a phase that reflects the culmination of the previous steps in embodied artefacts, assets, or documents (McKercher, 2020; Mechelen, 2016) that are then tested, iterated and refined (Brown and Wyatt, 2010).

In their study, Mechelen (2016) refers to this phase as elaboration through making as it engages young participants in a process of bringing to life the ideas they have been processing as a team. This phase produces varied artefacts and/or documents depending on the goal of the co-design team. In the development of digital interventions, this phase usually produces apps, websites and other online tools that are later tested by the focal group to generate information for further adaptation (Whale et al., 2021; Davis et al., 2020).

3.4.2.4 Feedback

After prototyping, the next phase is often a process of post-design evaluation (Sanders and Stappers, 2014; Thabrew et al., 2018) which involves testing and refinement of the prototype (McKercher, 2020). This phase is where feedback is used to refine the product or service to make it ready for use in the real world. It is characterized by the use of varied methods to generate constructive feedback that would be used to inform any needed refinement for the co-designed prototype. This phase is often achieved using semi-structured interviews, questionnaires, or group discussions (Whale et al., 2021; Graffigna et al., 2020). The term feedback has been used for this phase as it connotes a more qualitative outlook that depicts the significance of the perspective of the study participants as the intended end users.

3.5 Description of Study Setting and Context

The study was conducted in two schools (public and private) in Benin City, Edo State, Nigeria, among students in the senior secondary school arm. Nigeria's educational system comprises public schools (government-owned schools) and private schools (owned by an individual, body of individuals or an organisation). Overall, these schools operate within the standards set by the Nigerian government, but the private schools usually have additional standards that they operate by which are determined by the owners and/or the associations they belong to.

Nigeria has six geo-political zones, which are the North-east, North-west, North-central, South-west, South-east and South-south. Edo State is one of the six states that comprise the South-south geopolitical zone. The South-south is the zone with the highest percentage of literate men and women (15-24years) and has the lowest percentage (8.5%) of out-of-school children in secondary school (National Bureau of Statistics and UNICEF, 2018). Edo State records as the

state with the lowest percentage (4.9%) of out of secondary school children (National Bureau of Statistics and UNICEF, 2018 p.207); although this has now increased to 20.9%, placing Edo State in third place in the South-south zone (National Bureau of Statistics and UNICEF, 2022 p.289). The increase in the number of out of school children could possibly be due to the influx of Internally Displaced persons (IDPs) from northern states experiencing Boko Haram insurgence and banditry. Edo State consists of eighteen Local Government Areas (LGAs); with over four million residents (City Population, 2021). Benin City is the capital of Edo State and has the highest population of inhabitants. The participating schools in this study are situated within Benin City. This study refrained from choosing study sites in the northern region of Nigeria which has the highest percentage of tobacco consumers (Adeloye et al., 2019; National Bureau of Statistics and UNICEF, 2018) due to security challenges.

Figure 10: Map of Edo State (From Edo State Government) https://edostate.gov.ng/edo/.

In Nigeria, tobacco smoking among young people is not socially accepted. Thus, most studies focused on smoking are either quantitative and/or engage study populations over eighteen who do not require the consent of a parent/guardian (see discussion in chapter two). Reflecting on this tacit knowledge, I sought access to study sites rather than individuals as this would enable me to reduce the risk of inadvertently exposing minors who used tobacco products, especially as smoking status was not a criterion for participation. I sought access to study sites that matched suggestions in the literature review. The 2016 report by the African Tobacco Control Alliance (ATCA) showed that tobacco companies target school-going children by selling tobacco products in shops near their schools alongside other colourful and attractive products like sweets and candies. The report recorded mapping a distance of about 100 meters (328 feet) between a school and a tobacco sales outlet (shop or kiosk). The distance recorded in the ATCA report was used to guide the purposive selection of sites in this study.

3.5.1 Physical Description of Study Sites

Both schools (public and private) are located within a community in a peri-urban area housing a good number of local bars, clubs, and shops/kiosks where tobacco products (cigarettes and shisha) are sold. There is a high level of activities within the area due to the presence of mechanic workshops, shops/kiosks selling snacks, beverages, clothes, foodstuff, and fruits, a community market, and a health centre including bus parks with vehicles to the Nigerian Army barracks and the city centre (Kings' Square).

The public school is similar to the average Nigerian public school. It has a wide expanse of land with a large open field in the middle which students use as a playground to race, chat and play football. The open expanse of land in the school has no walls or gates so students can go and come with little or no interference. However, a security personnel was engaged to ensure students remained within the school premises. Despite the apparent lack of security, students and teachers enjoy coming to school to teach and learn. The atmosphere of camaraderie within the school environment is palpable. Teachers know students who are making academic progress and those who require more support. Classroom walls often have strong advice for male and female students (e.g. relationship advice) and signed messages by past students to visually show they attended the school and should be remembered by those who later use the classroom. The road to the school is a sloppy area with visible large cracks due to water erosion which is constant in

Benin City. The large tree along the road leading to the school always has students climbing to get fruits before and during break periods.

The private school is located in an erosion prone-area with large cracks that make it difficult for vehicles to easily access the road. During the rainy season, the road also has several large pools of water. Though the street is trekkable on foot, vehicles have to take other routes to get to the opposite end of the road where a market, churches, police station and shops/kiosks selling tobacco products are located. There are also several shops scattered around selling snacks, cigarettes, and soft drinks and offering printing services especially due to the presence of the tertiary institution nearby. The small shops close to the school inconspicuously sell cigarettes which is not very obvious to the students as the school hosts vendors within the school compound which is bounded by tall walls, a gate, and a security staff with logbooks for visitors' check-in and sign-out. Students are therefore hardly outside the school premises unless they are leaving the school compound after school hours.

The school has motivational quotes at strategic points within the school (stairs leading to classrooms, the principal's office, counselor's office) that focus on dreaming big and working hard to be a positive example in the future. The school also has a drug club (social club dedicated to anti-drug use) but with more active junior students than senior school students.

3.5.2 Study Site

In choosing the study sites, proximity (walking distance ≤ 300FT) of the school to a tobacco sales outlet, kiosk, or shop was employed as reports had shown strategic marketing of tobacco products using this means to attract young people (ATCA 2016, Iyiola, 2008). Other studies have also shown that the presence of tobacco retail outlets and the sale of tobacco products proximal to schools was one of the factors that made young people susceptible to smoking, experimentation and initiation (Adams et al., 2013; Itanyi et al., 2020; McCarthy et al., 2009; Osuh, Fagbule and Olatunji, 2020) and which can also breed place-based health inequalities (ChangeLab Solutions, 2019).

These considerations guided the selection of six potential study sites of which two were excluded as one only catered to primary school students while the other was excluded due to gang-related safety and security concerns; as the school was situated in a neigbourhood that had potential for clashes between rival gangs. The remaining four schools gave written (two schools) and verbal

(two schools) consent for the study after I presented a letter requesting access which also gave an overview of the study. The two schools who gave verbal consent assured me of their participation only if I was able to secure an approval letter from the Edo State Ministry of Education, which I later obtained and presented (see Appendix 8). Amongst the four schools, only two showed significant interest and willingness to accommodate the research for at least four weeks, as there were concerns that the research could disrupt their planned academic calendar. I had previously worked as a project facilitator with the staff and past students of three of the four schools, as such this could have contributed to their interest and level of accommodation; even though two of the three schools proved more willing to accommodate the study for an extended period. In addition, although the private school was my alma mater, the school principal and new staff members had no prior knowledge of who I was until a later introduction by a staff who was conversant with my prior work in schools. I also ensured the school principal and assigned staff for the study were not compelled to participate in the study. This was achieved by not informing the proprietress (school owner) that I was the researcher until the last session of the co-design workshop with the students. To further facilitate acceptance, and build rapport, and trust in both schools; I engaged at least one schoolteacher (still employed in the school) who was conversant with my prior work in the school to make an introduction to the school head.

Following the acceptance by the two heads of schools (after presenting the approval letter from the Edo State Ministry of Education); one public and one private secondary school was selected as the study sites. Both school heads were given the participant information sheet, consent forms for students and parents, and ethical approval letters from the Brunel University Research Ethics Committee, Edo State Ministry of Education, and the State Ministry of Health (See Appendices 9, 10, 11, 12, 13 & 14) to go through at their leisure. I was afterward asked to return at a later date to discuss the potential venue, dates, and time for the study. Both schools were purposely selected for the study rather than one as Nigeria operates a public and a private system of education.

Upon going through the participant information sheet, consent forms for students and parents, and ethical approval letters, the school heads assigned teachers they thought were capable of working with me to facilitate the study. Both teachers were asked to give the school head feedback reports as we worked together. I and the assigned teachers arranged a meeting and discussed an appropriate venue, date, and time to facilitate participation in the study. Both consented to an in-school venue for the workshops as it would facilitate better acceptance by parents and for the safety of their wards.

As previously stated, the process of co-designing usually starts with relationship building or re-establishing relationships to prepare a conducive environment for co-designing (McKercher, 2020). Whether it is called building the conditions (McKercher, 2020), or engagement and planning (Boyd et al., 2012), the goal is to ensure the co-design process runs as smoothly as possible within the context it is being applied.

3.6 Sampling and Recruitment

3.6.1 The Public School

The assigned teacher and I discussed the senior classes to be involved in the study as they had a total number of 838 students in two senior school arms (SS1, and SS2) at the time of the study. The school head asked that senior class three (SS3) be excluded as they were preparing to sit for an important external examination held annually in West Africa. After further discussions, we decided to work with students in senior class two (304) as they were within the age group (16 years and above) approved for the study, all situated within one class, already segregated into departments (Sciences, Social Sciences, and Humanities) and were building themselves academically and personally towards a focal area. The class selection also facilitated uniformity, a sense of togetherness and equal standing as all participants were at the same level of study and knew one another (Mechelen, 2016). Although the teacher was interested in involving two more students from SS1 as they had been observed to engage in anti-social activities; I proposed that we do not involve them as it would no longer be voluntarily consenting nor participatory. They may also perceive the insistence to participate as a means to make them an example and could feel singled out as they would be the only students invited from their class. We finally agreed on a date for the teacher to introduce me to the students (SS2 only), give them an overview of the purpose of the study, and invite them to a meeting where we would discuss further and ask questions. After my introduction and giving the students an overview of the study, sixty students from the three departments agreed to come to the next meeting so they could get further information. During the introduction and sensitization meeting (Mechelen, 2016), I distributed and explained each aspect of the participant information sheet, and consent forms for students and parents and answered questions asked verbally in public and in private. We decided to select Tuesdays and Thursdays for the co-design workshops just after their break period as the largest classroom would be available at that time. This was because the students in senior class three were sitting for the annual West African Examinations Council (WAEC) exam and were making

use of the classroom. A total of forty-eight students returned their consent forms and that of their parent or guardian.

3.6.2 The Private School

I and the assigned staff (school counsellor) discussed the senior classes to be involved in the study as they had a total of 122 students in two senior school arms (SS1, and SS2). The school head and assigned teacher unanimously agreed that senior class three (SS3) be excluded as they were also preparing to sit for the West African Examinations Council (WAEC) exam. We decided to work with students in senior class two (56 students) as they were within the age group (16 years and above) approved for the study, already segregated into departments (Sciences, Social Sciences, and Arts), and were building themselves academically and personally towards a focal area. Although the school head wanted to make it mandatory for all students in SS2 to participate in the study and directly pass a message to their parents to allow their wards to participate, I declined the offer. I proposed that we allow them to give their consent given the nature and approach the study demanded and because they would primarily determine if their parents approved and also gave written consent. While this was not fully to his liking as he anticipated a small number would be willing to participate if they were left to make the choice, he accepted my decision.

After an introduction to the students by the school counselor and giving an overview of the purpose of the study, fifty students from the three departments agreed to come for the next meeting so they could get further information. During the sensitization meeting as suggested by Mechelen (2016), I distributed and explained each aspect of the participant information sheet, consent forms for students, and parents, and answered questions asked verbally. A total of thirty-six students returned their consent forms and that of their parents or guardians. We decided on Mondays and Wednesdays for the co-design workshops to make use of the lesson period after the school closed for the day, as this would limit the classes they missed to a few with the one-day interval between Monday and Wednesday to catch up. It is essential during the co-design process to align with the resources and time available to the institutions, as this would build trust, and create an atmosphere for acceptability and participation (Bowen et al., 2013; Davis et al., 2020).

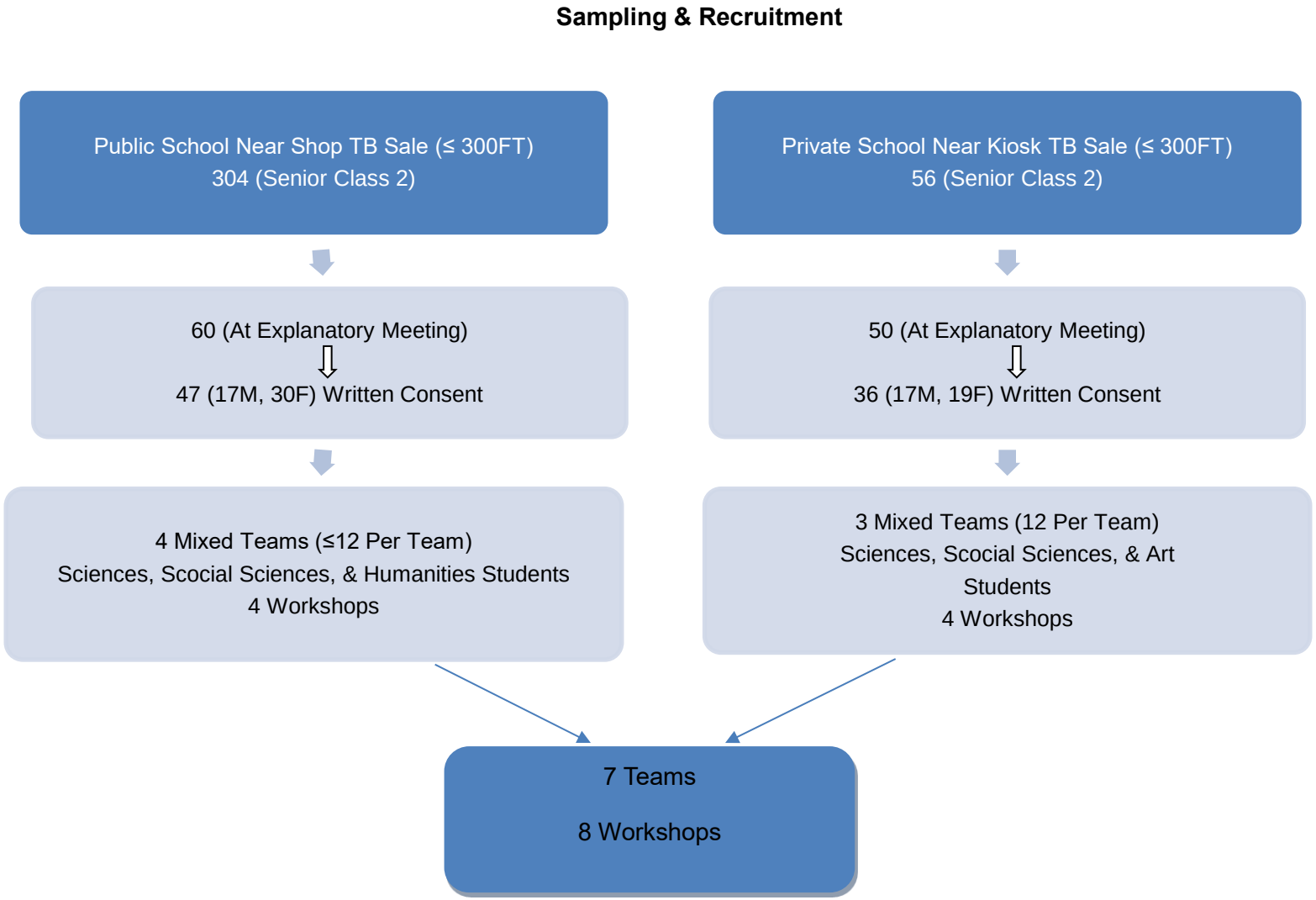


Figure 11: Flow chart of Sampling and Recruitment Process

3.7 Data Collection (Doing the Co-design Workshops)

This study utilized workshops for the process of data collection as observed in other co-design studies with young participants (Bowen et al., 2013; Davis et al., 2020; Mechelen, 2016). Workshops are collaborative working sessions to facilitate the achievement of an agreed goal by a team and differ from conventional meetings as they utilize creative approaches and are geared towards solving a problem, creating ideas, or resolving an issue among teams (Hamilton, 2016 p.1). Collaborative workshop spaces with interactive activities can also stimulate reflection, shared insight and divergent views. These advantages often outweigh challenges such as potential for dominant voices, social desirability bias, and reduced depth on sensitive topics due to the public nature of group settings, when the workshop is skillfully facilitated with attention to context and group dynamics (Davis et al., 2020; Mechelen, 2016). The workshop setting facilitated flexibility for group discussion, interaction, and tasks which enabled the participants to actively participate with some level of freedom despite being within a classroom in their school.

The co-design workshops entailed a series of activities (writing and drawing tasks, discussion) to generate data on young people's perspectives and ideas on health communication design for smoking prevention, and the development of a communication plan. During each workshop (which the school heads agreed to last for one hour to one hour thirty minutes) the participants were segmented into groups (Mechelen, 2016; McIntyre, 2008), based on their departments with each department represented within each group. As it does not matter how big a workshop is provided there is enough space to segregate participants into groups (Hamilton, 2016 p.17), it was important to split participants based on the school structure they were familiar with. Each group had between nine to twelve participants, based on recommendations for focus group discussions (Baumgartner, Strong, and Hensley, 2002; Onwuegbuzie et al., 2009) to ensure groups were not over-crowded and to give room for each participant to make contributions.

At the start of each workshop, the preliminary conclusions and key concepts from the previous workshop were presented by the researcher (facilitator), so that the themes and ideas explored were built on progressively. The four workshops conducted per school were primarily focused on each stage of the co-design process.

3.8 Data Collection Methods

3.8.1 Drawing

Each group was asked to draw a piece that represented their collective decision and input. Drawing is a practical approach to visual expression that does not require complex technical skills or a wide array of tools and materials (Kara, 2020; Martikainen and Hakokongas 2022). The use of drawing as a central creative method in this study was firstly to acknowledge the position of my participants as students within a structured learning environment who are used to working with paper and pencils or pens. Secondly, it gives room for expressions that are not limited to text alone given the variety that surrounds communication, and thirdly to facilitate group input.

In research that has visual components, it is advisable to reflect across disciplines and timelines and build on the existing knowledge and best practice examples (Mannay 2016 p5). I took this advice and carefully considered the best method for young participants who were students and had most likely (I found no literature to say otherwise) never participated in a study using creative methods and co-design as a methodological framework in health communication design for tobacco use prevention. As such, the selected process in this study was structured participant-led drawing (Ward and Shortt, 2018). The drawing process was structured participant-led to enable the participants to have a sense of stability, confidence, and direction as the research method was not popular. The structured samples therefore provided a template for expression but not what to express.

The use of structured samples considered the probability that the participants are used to being taught with examples in the school setting. The study by Wall et al. (2017) was helpful in this regard. They used a similar method among students aged 4 to 16, where they presented blank comics in the form of a six-part storyboard to understand how children learn in school. The young participants were asked to draw and write about a time (past or present) when they learned something new. The structured approach provided a template for data gathering but left the template blank for the participants to draw and write what they wanted, and Wall et al. (2017) acknowledged that using more visual prompts could have enabled their participants to produce better narratives of how they learned in school. They also highlighted that visual approaches were valuable in engaging young people and supporting effective participation, but the specific design of the visual structure used to support their participation needed careful consideration based on the research aims and what the visual structure prompts and enables. To address this, the structured samples of the mind map, problem tree, idea cloud, and road map were not presented

as blank samples but rather had at least two examples to visually guide participants in drawing to express their thoughts. Also, while Wall et al (2017) presented the storyboard template for each of their two hundred and ten participants, I focused on working with participants in groups which helped to produce less drawn materials and facilitate data management and analysis. While the drawing technique was structured, it did not limit participants from adding drawings outside the provided templates. This offered participants an approach with **"structured-flexibility"** that facilitated their participation irrespective of their artistic skills (See details about structured-flexibility in Chapter Eight).

Drawing is considered a participant-driven approach to data elicitation (Martikainen and Hakokongas, 2022) which demands prior thinking and reflection before committing to paper. As such, each group was engaged in individual tasks (mind mapping) before coming together as a group to make decisions on what to put on paper (problem tree, idea cloud, and road map). Each group decided to ask individuals they felt could draw well to oversee this task. The groups were engaged in drawing a problem tree, an idea cloud, and a road map. These aforementioned three materials were purposely selected for group tasks as the techniques involved were identified as promoting group participation in participatory research (Chevalier and Buckles, 2019) to identify causal factors, as well as map problems and possible solutions based on the context of participants (Chevalier and Buckles, 2012; Green and Thorogood, 2018; Kara, 2020). In addition, using these techniques gave opportunity for brainstorming, group discussion, negotiation, and agreement which is reported to be pivotal for decision-making within groups (Mechelen, 2016).

Participants were presented with printed A4 coloured internet samples of a mind map, problem tree, idea cloud, and, road map (See Structured samples in Result Chapters). These structured drawn samples enabled participants to confidently attempt the tasks in the co-design sessions with or without drawing skills (Kara, 2020; Ward and Shortt, 2018). The use of the structured samples made it clear from the beginning of the study that no artistic skill was needed to participate. The drawn materials served as tools for eliciting data to facilitate conversation with participants during group discussions and as objects for analysis (Brown and Collins, 2021; Mannay et al., 2019; Ward and Shortt, 2018).

3.8.2 Group discussion and Observing Participants

The group discussions involved teams deliberating on what they did during a group task, why and how they did it, and describing what they felt was important to them (McIntyre, 2008; Mechelen, 2016). The group discussion was iterative and based on the goal of the co-design session and on what the groups highlighted in their drawn materials; as such, a semi-structured discussion guide (See Appendix 15) was used. The guide helped to aid elicitation and conversation based on what was drawn or decided by the different groups. The group discussions during the workshops were either audio or video recorded based on the preference/consent of participants per session.

During group discussions, participants were observed and supported as needed especially if they wanted to confirm certain “facts” that required my input as a researcher (McIntyre, 2008). Key areas observed and noted were group processes, verbal and non-verbal cues, how they made decisions, ideas, and thoughts that were dominant or not considered vital as a group (Mechelen, 2016; Onwuegbuzie et al., 2009).

The use of group discussions and participant observation during the co-design workshop sessions took into consideration the fact that participants worked in groups; as such, recordings and observation notes per group were gathered. This facilitated data management and analysis as data per group were systematically saved and transcribed.

3.8.3 Group Diary

Each group used a diary given to them to record how they arrived at decisions, the difficulties they encountered, and new things they learned or discovered (Mechelen, 2016) in the co-design process. The use of group diaries in this study took into consideration the fact that the duration for the co-design workshops with the participants was scheduled (after negotiation with the school authority) to last between one to one hour and thirty minutes, and discussions that may be pivotal to the direction of the research process may be discussed outside the workshops. Utilizing a group diary ensured that each group could document activities or meetings they held outside the planned co-design workshops. The use of diaries was also meant to enable participants to share their personal views non-verbally given that the workshops were being held in their school environment and accompanied by an assigned chaperone in some co-designs sessions. This was done to facilitate a safe and Inclusive space for participants to express their views (Lundy, 2007).

The work of Mechelen (2016) was helpful in this regard where they used a similar method to co-design with students in a school. They asked participants to give specific details on what they had produced and the reasons that guided it. While participants in the study selected who wrote in the group diary immediately after each meeting; the participants were not allowed to keep the diary or take it home with them to prevent misplacing it. In this study, I gave more flexibility for participants to take responsibility for keeping their diaries and to determine what they wanted to record in them. As suggested by Mechelen (2016), each group was asked to select a Chief Executive Secretary (CES) who would oversee writing their group's line of thoughts, decision-making process, and other areas they found important in their diary. While they were asked to specifically record their decision-making process, they were asked to also record any other area they thought was important in words or drawing. The diary entries were semi-structured, time-bound, but flexible (Janssens et al., 2018; Mechelen, 2016; Kara, 2020). This gave room for participants to record their decision-making process and anything they thought was vital after each workshop to facilitate recall. It also allowed them to highlight their progression at key points at the beginning, during, and at the end of the co-design process.

Although no one was elected as the group leader, each person was expected to make contributions towards the group's success. Each person could demand to write in the group's diary and report what they felt their CES left out. This opened up opportunities for groups to decide what they wanted to give an account of in writing or verbally. It was decided that the Chief Executive Secretary (CES) would safely keep the group's diary and bring it to school when needed.

3.9 Discovery

The discovery workshop was primarily aimed at enabling participants to identify the causal factors of smoking among young people. In the discovery workshop, I facilitated the segregation of participants into groups. Each group was strategically formed to ensure students from the three school departments were represented within each group. The group formation was also to create a balanced representation of males and females as female participants outnumbered the males. As both schools were mixed schools, including male and female participants in the same group was not deemed unconventional. Following grouping, we decided on ground rules and thereafter requested each group to select a name that they could change later if they so choose.

Thereafter, each group was requested to fill out an adapted version of the World Health Organization Global Youth Tobacco Survey (WHO GYTS – see Appendix 16) without writing their names or any form of identification. The survey was aimed at facilitating insight into their demographics, smoking status, and any decisions they took later in the co-design process.

During the workshop, each group nominated a Chief Executive Secretary (CES) who was in charge of their group's diary although each member of the group could also record what they thought was important. We utilized drawings of the mind maps and problem trees to explore what young people thought were the root causes of smoking within their environment. The mind maps and problem trees were particularly useful in visually establishing causal or potential causal factors at a glance while presenting an opportunity for those involved to be creatively engaged and find satisfaction in the task (Chevalier and Buckles, 2019). Although participants were grouped, utilizing individual mind mapping before group drawing of the problem tree proved useful as it engaged them individually before group interactions. This enabled each participant to reflect and put their thoughts together before engaging with other participants in their group to draw their group's problem tree. Although previous studies had established causal factors of smoking among young people (Oyewole, Animashaun and Chapman, 2018; Egbe et al., 2014), it was appropriate to work from what was seen as the causes from the perspective of the focal group as this would inform subsequent decisions, in keeping with the tenets of participatory design

In the discovery workshop, all root factors enumerated by each group were put into a word cloud (accessible to anyone) to generate key factors for group consideration and analysis (Kara, Mannay, and Roy, 2024). This enabled participants to see mutually selected factors as well as those not selected by other groups. The word clouds were used in the next co-design session to facilitate idea generation for solutions to the identified causes of smoking.

3.10 Idea Generation

The idea generation workshop was primarily aimed at generating key ideas and/or messages as communication solutions to the identified root causes of smoking from the discovery workshop. In the workshop, the word clouds from the mind maps and problem trees were presented to participants in coloured A4 prints. After this, we proceeded to address some misconceptions (identified from their mind maps) participants had about tobacco (nicotine) and cannabis (cannabinoid).

In facilitating the objective of the workshop to aid the generation of ideas/messages for anti-smoking health communication, participants were shown video clips from the World Health Organization and Nigeria Federal Ministry of Health anti-tobacco campaigns. The campaign videos shown (using laptops) were focused on World No Tobacco Day 2016 and 2018 as the Federal Ministry of Health in Nigeria reported activities for those dates according to the WHO FCTC Global Progress Report (See Chapter Two, Table 4). The videos facilitated seizing their attention, and enabled the generation of creative ideas while giving room for reflection and discussion on what was watched.

First, participants were given sticky notes to individually capture ideas for messages based on the identified root causes of smoking in the word clouds. These ideas/messages were mapped (See Chapter Five, Figure 21) to the four key areas in the socio-ecological model (individual, interpersonal, community and society). The mapping of ideas/messages to the four areas in the socio-ecological model was to facilitate context-based message framing, and ensure participants were involved in the process of analysing their messages based on a health promotion theory. This was done given the participatory approach would not involve hiding the theoretical basis of the study from participants.

Afterward, the ideas/messages were brought together in a drawing representing each group's "four-level message" (See Chapter Five, Figure 22). The term "four-level message" is later referred to as "idea cloud"' as this was the name generally preferred by participants. We worked on each group's idea cloud over two weeks as we had to clarify and articulate their collective campaign focus and message. I did this through school visits (approved by the school heads) and further discussions with each group during their break periods.

3.11 Ideation and Prototyping

The ideation and prototyping workshop was primarily aimed at facilitating the design of key messages as ranked by the groups. After we were able to clarify what the groups' focus and messages were, each team's nominated a speaker to present their teams' idea for each level (individual, interpersonal, community, and society). At this point, it became unclear as to which group's idea to vote and focus on. This is because each group's idea had close similarities, and it became apparent that selecting one group's idea over the others would not aid a participatory research process. To this end, we decided to put each team's idea into developing a road map

(communication plan) and inputting their preferred communication channels for the execution of the campaign focus and generated messages. At this stage, one of the groups had designed posters to communicate their group's key message while the key messages from other groups were designed using Canva on their behalf.

After we completed each group's communication plan, we had group discussions with each group separately to reflect on the process thus far. We reflected on what they wrote in their group's diary, their group's name, key message, and preferred channels of communication, and clarified whether the poster designs generated from their group's message mirrored what they were trying to communicate. The groups subscribed to the idea for a video to be produced to effectively pass the message to young people using social media platforms and TV programs. As such, we discussed ideas and potential storylines for a short video which we agreed to be produced as a short film by a stakeholder in film within the state. Also, at this stage, one of the groups wrote and presented a song written by their group member.

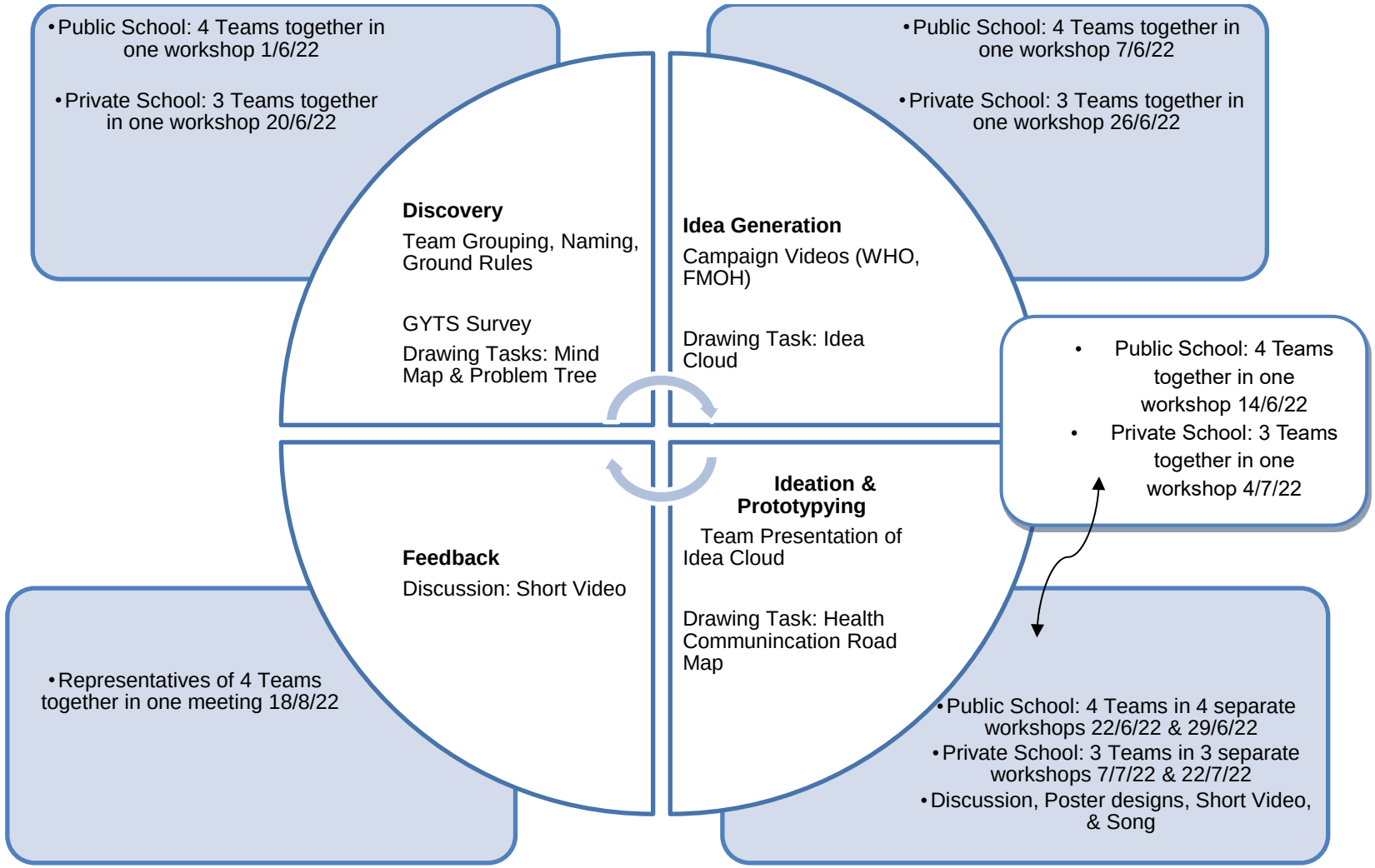


Figure 12: Summary of Co-design workshops & Timeline (1/6/22 – 18/8/22)

3.12 Feedback

In the feedback meeting, we had a round table discussion where we played the short video developed by the film producer and discussed what they liked or disliked about it. A semi-structured discussion guide aided discussion (see Appendix 15) during the feedback phase. The ten participants representing four teams from the two schools who attended the feedback meeting (after gaining consent from their parents and the assigned school staff as their schools were already on break) gave verbal feedback on what should be done to improve the video content.

Upon examination, it was agreed that the storyline of the video focused more on poor parental relationships than peer pressure and addiction that could be faced by young people. We also discussed alternative formats and decided that the video should be an animation as some young people would better prefer animation to a traditional video.

3.13 Analysis

Thematic analysis (TA) as employed by Braun and Clarke, (2021) was used to facilitate the process of analysis. TA acknowledges the researcher's active role in knowledge production (data set, theoretical assumptions and analytical skills) and embraces the researcher's reflexivity, subjectivity and creativity. This acknowledgement facilitated the analysis of both text and visual materials in this study. TA comprises six key steps: data familiarization, generating initial codes, generating initial themes, reviewing themes, defining & naming themes, and writing up.

The audio and video recordings from the workshops including the diary entries and participant observation notes from each group were transcribed verbatim and manually to facilitate data familiarization. The process of transcribing was carried out by first transcribing audio/video recordings and taking notes of participant's interactions and the facilitator's approach during each workshop to facilitate a process of reflexive analysis. To further facilitate the data familiarization process, data transcribed for each workshop (one to four) was immediately followed by each group's drawings, their diary entry for the associated workshop, and my observation notes. This enabled me to read and familiarize myself with the different data (text and visual) as a whole. Afterwards, the data (as a whole) was printed using A4 papers. This allowed for further familiarity

with the data and to start initial coding (open and descriptive coding) manually using pens (black and blue ink).

The process of coding was done line by line and in segments using descriptive phrases that summarized what the segment of data addressed. While coding, notes were also made based on how the segments of coded data addressed the principles of co-design and tenets of constructivism (prior experience informing new knowledge and reality) as this would facilitate the process of writing up.

After coding, segments of data that were similar were grouped to generate sub-categories and themes. The initial themes generated from the consecutive workshops were treated as categories. These categories were later compared to assess if they were placed within appropriate final themes (See Figure 35). The themes were further assessed based on the goal of the study to inform tobacco control health communication campaigns. The themes were subsequently named using a combination of words from the participants and the facilitator to reflect the shared approach in the co-design study.

During the analysis, details that needed further clarification were confirmed with the participants to ensure the analysis was consistent with the beliefs and perceptions of the focal group in the context being studied. The diary recorded by each group including the drawings/posters was also given key consideration in the analysis (Brown and Collins, 2021) and used to validate the themes and outcome of the inter-connected workshops. The work by Brown and Collins (2021) and Mechelen (2016) facilitated this process of analysis. Brown and Collins, systematic visuo-textual analysis subscribes to connecting visual and textual information and interpretation where none of the modes of communication is seen as superior to the other. Similarly, Mechelen (2016) subscribes to multimodality, integrating different modes of communication; in this case verbal (narrative/text) and material (drawings/posters) with the materials often linked to the emotion or mood of participants (See Figure 27).

The findings from the study are reported as a process to reflect the co-design nature of the study, while the themes are reported with the aid of a thematic map. The use of a thematic map is first to inform tobacco control health communication focused on young people in Nigeria and second, to align with the concept of multimodality and ensure both textual and visual data are treated equally.

3.14 Ethical Considerations

Ethical considerations key to this study were approvals from the appropriate bodies, consent by parents/guardians, and assent as well as ongoing consent by participants. Considering that participants were minors, and were assessed through schools, the appropriate approvals were important.

Ethical approval for the study was obtained from the Brunel Research Ethics Committee, Edo State Ministry of Education, and Edo State Ministry of Health (See Appendix 12, 13 & 14). The approval from the Edo State Ministry of Education gave access to the government-owned secondary schools while the private-owned secondary schools gave written and verbal consent for the study. The approval from the Edo State Ministry of Health also ensured that the study was assessed as appropriate for the health and well-being of young people in the State. The ethical approvals from the aforementioned bodies were presented to the school heads to facilitate acceptance, access, and participation by young people in both schools.

Signed and dated informed consent was also obtained from the participating students and their parents/guardians. Before the co-design workshops, a meeting was arranged with the consent of the school head and students who were interested in participating in the study were asked to attend. In the meeting, we went through the participant information sheet, and students sought clarification and asked questions. Attending students were given their consent forms and that of their parents to return later.

Students who wished to participate but were not given signed consent by their parents/guardians were asked to withdraw before the commencement of the workshops but were given the same treatment (e.g. allowed to share in the refreshments) as those who had parental consent. The consent forms indicated the purpose of the study as well as data collection, management, and protection specifications. Although signed informed consent was obtained before the commencement of the study from each participant; given the participatory approach to the study, ongoing explicit (verbal) consent (Klykken, 2022) was also obtained at each workshop to ascertain they were comfortable with the status quo, especially with regards to being video recorded, audio recorded and photographed. During the workshop, participants who had to leave so they could go assist their parents to sell at the shop or pick up siblings after school were allowed to leave without constraint.

Another key ethical consideration in the study was the smoking status of participants. The smoking status of young people who participated in the study was also kept confidential as they were asked to fill out a short survey without indicating their name or any form of identifier. Participants who during the study identified as being vulnerable to tobacco smoking were directed to the school counselor for guidance, and support in handling relatives who were smoking at home and encouraging them to experiment.

3.15 Reflexivity

In considering reflexivity in this study, I took into consideration who I was as a health promoter and researcher and viewed myself as a part of the research process (Merriam and Tisdell, 2016) and not just someone going to carry out a project or collect data. I entered the study sites and introduced myself as a health promoter and a doctoral researcher from a foreign university who was studying on a scholarship. This became of particular interest to some students (who were interested in obtaining a scholarship) and may have influenced their decision to participate. While presenting reasons why they should consider participating in the study, I emphasized my role as a practitioner (I explained who a health promoter was) who was interested in ensuring the perspectives of young people were represented in Nigeria's tobacco control health communication plans.

During my work as a health practitioner in schools in Nigeria; I knew that the young people I would encounter would most likely want to be sure that they were not giving their perspectives for a study that would end up not being acted upon thereby wasting their time. In line with internationally recognized participatory model to facilitate audience and influence while working with young people (Lundy, 2007), I ensured I pointed out that our work would be presented at a stakeholders' workshop where individuals, and organisations who could influence youth health promotion and tobacco control would be in attendance. This verbal agreement was key in negotiating and gaining participation.

Seeing as the school authority had given a limited time frame (1 hour to 1:30 minutes per meeting) for the workshops, I ensured that each workshop had a structured but flexible plan to accommodate the time limit. I deliberately planned to structure the workshops to account for moments of reflection (through individual tasks) and discussion and group reflection (through group tasks) including the use of group diaries. The group diaries were to facilitate documentation

of key moments among the participants that may have not taken place within the time frame of the workshops.

In structuring the individual and group tasks during the workshop, I suggested ways the data could be presented by the participants by showing them some examples. These examples were meant to acknowledge their current positions as students (already reading and writing) while giving room for the process to be enjoyed rather than seem like an additional “school assignment”. While various examples of mind maps, problem trees, and road maps were shown to the participants, they were left to decide how they wanted to represent their group. This proved difficult for some groups as they wanted to be told exactly what to do. For others, it was an opportunity to do what they wanted, how they wanted. As such, I ensured I reached groups who were finding it difficult to work together through school visits (five visits per school).

The workshops and school visits also allowed inter-dependent learning and knowledge exchange between me and the participating groups. Any tasks that I and the participating groups could not accomplish during the workshop were also addressed when I went for school visits. These visits proved productive as aspects of the study we were not able to discuss during the workshop were brought up. For instance, one of the teams in the public school had the idea of presenting a short play (to demonstrate the effect of smoking) during the school assembly in the morning. While discussing this, the students (especially the male students) noted that the message would not reach the “right students”. This was because they felt that “those who would need the message the most” would not be at the assembly ground in the morning as they were “latecomers”. The idea of going from class to class to present the play was also shelved as it would prove stressful. They finally decided on the use of an online media that they were sure the students would access. While these school visits were not audio or video recorded, they were pivotal in determining the direction of successive workshops. The discussions outside the planned workshops also helped to improve my relationship with the participants as they became more confident in airing their views and asking questions during the workshop sessions. Seeing me in their school environment constantly (working with participating groups and speaking with schoolteachers) also facilitated a sense of acceptance within their space that enabled us to work better together. In this light, it could be said that I moved from being a peripheral member to being considered an active member (Alder and Alder, 1987) as the participants learned how to work together to represent the ideas of their group as best as they could.

In keeping with the tenets of participatory research (democratic), I was faced with a challenge I did not at first foresee. The number of young participants who were interested in being a part of the study was not technically in line with the “small number” associated with a qualitative study. This meant I had to re-strategize and place interested participants in groups that would be within the advised structure of a qualitative focus group of nine to twelve (Baumgartner, Strong, and Hensley, 2002; Green and Thorogood, 2018; Onwuegbuzie et al., 2009). While this was logistically more intensive, it made me hopeful for the interest in and the development of tobacco control health communication by young people for young people.

3.16 Transparency, Validity and Reliability

Transparency refers to the explicitness of the methods engaged in the study and how clearly, they are explained (Green and Thorogood, 2018). The participatory approach to this study and the use of methods that were deemed appropriate for young people has been reiterated. The advantages of the methods as they relate to reaching the research objectives and facilitating participation have also been considered. To this end, a clear description of the research process from methods applied, to the report of findings is highlighted. Furthermore, a research diary documenting challenges, and issues in maintaining cohesion between the study’s aim, design and methods (Noble and Smith, 2015) is reflexively addressed.

Validity in qualitative study refers to the “appropriateness” of the tools, processes, and data (Leung, 2015). It involves the researcher actively seeking to ensure trustworthiness (Stahl and King, 2020), authenticity and credibility in the research process and findings (Creswell and Creswell, 2018). It also refers to the veracity and application of the methods including the precision in which the findings accurately reflect the data and participants’ expressions (Given, 2008; Noble and Smith, 2015). To ensure the study’s validity, methods, and tools; a participatory process appropriate for young people was engaged towards achieving the aim of the study. The participatory co-design approach adopted for the study was maintained during the research process as participants were consistently engaged in a process of discussion and reflection to gain better insight into their views and perspectives.

Similarly, to ensure the study’s validity, sufficient textual and visual data to support interpretation (thick description) is provided for the analysis and result chapters. I have also approached the thesis reflexively by actively clarifying my role, and positionality and ensured I approached the

research process and analysis bearing in mind the context of the study (Nigeria). Furthermore, validity was considered by using data from group discussions, diary entries, drawings and observation notes to ensure the findings were cohesive.

Reliability in qualitative study describes consistency within the employed analytical procedures (Noble and Smith, 2015). This study ensured reliability by using consistent methodological (participatory co-design) and epistemological (constructivism) underpinnings while conducting analysis. The thematic analysis of data from the consecutive co-design workshop was done using open descriptive coding and the generation of initial categories that eventually fed into the key themes in the final result chapter.

3.17 Summary

This chapter has detailed how the co-design study in this thesis was conducted. It addressed the methodological considerations, and the participatory approach to using the adopted methods and highlighted guiding principles while working with seven groups of young participants across two schools.

The next four chapters will present results from the four consecutive co-design workshops. This is done using a successive reporting approach to highlight the progress from one co-design workshop to the next. The chapters will address the aim of the workshop, the activities carried out, and the resulting initial categories from the thematic analysis of discussions, observations, drawings, and group diaries.

CHAPTER FOUR

RESULT

DISCOVERY: FROM STICKY NOTES TO PROBLEM TREES

Overview

This chapter provides a detailed account of the first phase in the co-design process (discovery). It gives an account of the process and activities carried out during the discovery workshop. In this chapter, I describe activities such as participant group creation, using an adapted version of the WHO Global Youth Tobacco Survey (WHO GYTS), co-creation of workshop guidelines, group naming, and drawing activities. The chapter also includes a presentation of initial themes from the discovery workshops in both schools.

4.0 Introduction

The discovery phase is the first phase in the co-design process. The discovery phase is aimed at gaining insight into the root causes of smoking as identified by the participants. In a co-design study, the discovery session helps to establish the core of an issue to inform appropriate solutions (McKercher, 2020). This process is vital as it enables the participants in the co-design process to set the pace, agenda, and direction of each successive session.

The discovery session in this study was used to set the stage for other successive co-design sessions by using workshops and working with teams. Workshops were used to facilitate the co-design sessions as workshops help to facilitate needed space to promote teamwork, discussions, and shared knowledge. Eighty-nine participants in the same class (senior school two) from two schools initially consented to participate in the workshops, all of whom were segregated into seven distinct groups based on their discipline to facilitate teamwork and enhance discussions.

The results of the discovery workshop are therefore reported as a process with outputs and themes that inform the next co-design phase as the process is interconnected. This ensured that reporting the results from the workshops addressed core principles of co-design and was not just transactional (McKercher, 2020).

The discovery workshop aimed to establish the root causes of smoking among young people as identified by the participants themselves. This was done using structured individual and team drawing activities, participant discussion, observation, and team diary entries.

To facilitate a smooth discovery process, the workshop was segmented into two sessions: pre-discovery and discovery. The process and activities in these sessions are reported sequentially alongside their corresponding outputs after which an analysis is presented. While an analysis is given at the end of each, the process and activities in each session are equally an inherent part of the analysis, hence a reflective piece is used at the end.

Pre-discovery Session

The activities in this session included creating groups to facilitate teamwork and group management, using an adaptation of the World Health Organisation Global Youth Tobacco Survey (GYTS) questionnaire (See Appendix 16), and co-creating guidelines for the workshops.

4.1 Workshop 1, Activity One: Creating Groups with Participants

In the workshop, participants were asked to form groups with a mixture of people from different disciplines (as highlighted in Chapter Three) to facilitate ease in group work and enhance conversations. Each group was purposely formed to incorporate participants in the sciences, arts, and social sciences, including a mixture of male and female participants to arrive at a fair balance. By using the discipline structure known by the participants, and the total number of eighty-nine participants who consented to participate, each team had between eight to twelve participants during the discovery workshop.

4.2 Workshop 1, Activity Two: Using the WHO GYTS Questionnaire

The GYTS questionnaire enabled participants to report (if they wished) their attitude to tobacco smoking, gain insight into some issues that could be discussed later, and familiarize themselves with some concepts in tobacco control.

The anonymous GYTS questionnaire (See Appendix 16) filled by participants had questions on participants' tobacco use, and tobacco use by relations and peers. Additional questions adapted for this study were single-choice, multiple-choice, and open-text questions. These questions asked about the type of messages participants preferred and would recommend, if they had ever worked in a team, if they used social media/type of social media, and if tobacco products were sold near their school/home. Details provided by participants are shown in Table 5 below.

The socio-demographic details from participants provided some insight into their message preferences and channels of communication. Most favoured messages showed the scary effects of smoking using channels of communication within their school and the internet/social media. Although most participants (71/89) had a negative view of smoking, some had experimented with tobacco products like cigarettes and shisha while others had relatives (46/89) and friends (34/89) who used tobacco products.

Table 5. Sociodemographic characteristics of participants

Participant Socio-demographic Characteristics	Number
Age of Participants (13-19)	
13	1
14	14
15	24
16	34
17	14
19	2
(n=89)	
Gender	
Males	37
Females	52
(n=89)	
What Participants Think About Smoking	
I think it is Good	5
I think it is Bad	71
I don't think about it	13
(n=89)	

Tobacco Use Among Participants	Ever Experimented With Cigarettes	Ever Experimented With Shisha	Ever Experimented With Smokeless Tobacco	Currently Smoking
Yes	17	10	2	1
No	72	79	87	88
(n=89)				

Tobacco Use Among Participant's Friends & Family	Participants Who Have Friends Who Smoke	Participants Who Have Nuclear or Extended Family Members Who Smoke
Yes	34	46
No	55	43
(n=89)		

Preferred Anti-tobacco Message (Multiple Choice Response)		Preferred Anti-tobacco Message Channel (Multiple Choice Response)	
Message on Tobacco Industry Tactics	31	School Health Talk	38
Message persuading young people not to smoke	38	Religious Place	5
Message about the scary health effects	70	Movie/Drama Series	15
Message about how to quit smoking	40	Radio	12
Total (n)	179 (100)	Internet	43
			113 (100)

4.3 Workshop 1, Activity Three: Co-creating Guidelines for Co-design Workshops

After organizing participants into groups and completing the GYTS, participants were reminded of the purpose of the co-design process and asked to set the guiding principles for the workshops. A summary of all suggested guidelines from the participants and the facilitator for each school is shown in Table 6 below.

The guidelines suggested by the participants were mostly around ensuring decorum during the process, respecting one another's input (Individual behaviours), and working as a team (team behaviours). Participants emphasized "not clapping or arguing noisily", "one person speaking at a time", "being fair" and "being cooperative". As the facilitator, I also asked for their consent to include some guidelines. Two were accepted and one was rejected by the majority.

Table 6: Summary of Co-decided guidelines

Suggested Guidelines by Participants and Facilitator from the Two Schools	
Public School (Government-Owned)	**Private School (Private-Owned)**
1. "Wait for each person to speak. Do not Interrupt"	1. "Be punctual"'
2. "Do not insult other groups"	2. "Be Cooperative"
3. "No Argument. If we cannot agree on something, we should vote on what to do"	3. "Be positive/Optimistic"
4. "Clap once, don't clap anyhow and make noise	4. "Be Fair"
5. "See each other as family. Tolerate each other"	5. "One person should speak at a time"
6. "Don't Look down on anybody"	6. "In every action we take we should take it in a confident way. Be confident/bold"
7. "No stereotyping". "I mean we should see each other as equal. We should not say because this person is from this family or this person is a Christian, that person is a Muslim; thereby stereotyping each other. Each person should be allowed to talk"'	7. "Be Creative"
8. Keep phones on silent mode (From Facilitator- accepted) 9. No distracting side talks (From Facilitator- rejected)	8. "Respect each and every person in your team. It is very important. While working together, even if a person says something and you know it is not correct, you should not correct the person in a way that will bring down the person's self-esteem. So please respect one another. (From Facilitator - accepted)

The pre-discovery activities provided an opportunity for the participants to gain further clarity on what the co-design process could be like. They collaboratively set the rules of engagement for each successive co-design session and took the opportunity to get to know the people they would be working with. This enabled the participants to determine how the sessions would go while being guided by the facilitator.

Discovery Session

The activities in the discovery session included naming their group by participants and structured drawing activities segmented into individual mind mapping, and team drawing. While the proposed activities helped to maximize the time allowed with the participants, it also helped to make the process unambiguous for the participants who had little or no experience in participating in co-design workshops. Participants could seek clarification about the proposed activities and determine if they wanted to participate and leave when they chose to.

The discovery workshop was conducted to facilitate easy progress from individual ideas to group ideas. This ensured that the process was kept in line with ethical tenets and key principles of co-design such as inclusivity, sharing power and respecting all forms of knowledge. In facilitating the progress from individual ideas to group ideas, participants led the process and were simultaneously involved in some level of analysis; as they discussed and co-decided on what to draw, write, and leave out. The activities from the discovery session would be presented sequentially and supported with participants' quotes from transcribed discussions, observations, team diary entries, and drawings.

4. 4 Workshop 1, Activity four: Naming the Group

The first task participants were asked to embark on was deciding the names(s) of their groups. This goal was to facilitate discussion, and teamwork and create a sense of ownership for a shared goal. For some groups, naming their team came easily while for others it was difficult.

Participants were asked to name their group for the entire co-design phase with the option of changing the name as we progressed if they chose to. Naming is seen as a medium of exercising power and agency as well as a key practice with social and cultural implications in Nigeria. Most

participants were thrilled with doing a group naming and saw it as an opportunity to determine what they would be called. By asking participants to decide on a team name, they took part in ensuring that the process maintained confidentiality and anonymity, as individuals did not have to be called by their given names.

While there were some arguments, negotiations, and compromises, the majority eventually decided to use the name most widely accepted by most members. The names selected by participants were closely linked to how they saw themselves, how they wanted others to see them, or what they aimed to achieve through the co-design process. The names selected by the seven teams from the two schools could broadly be categorized into two areas. Names emphasizing scholastic ability and creativity (Creative Scholars, Young Erudite Scholars) and names indicating power, uniqueness, and purpose (Phoenix aka Kakarot, Excellent Stars, Team E.P.I.C, Teenagers Fighting Tobacco, Progressive Team).

For instance, team Creative Scholars stated during the discussion that they selected their name (after debating and rejecting two others) because they saw themselves as creative people who were also intellectuals. The team wanted to identify with being seen as creative and intelligent young people; an ability that they subsequently showcased by producing visual representations of their group's outputs. The team decided on a name that showed (with the addition of "s" in scholars) that they were leveraging the creative ability of everyone in the team to collectively demonstrate their uniqueness. The team's choice of name is a pointer to young people wanting to be recognized for their unique abilities individually and collectively.

During the discussion, Creative Scholars expressed that they were proud of the name they had selected as it made them feel special and creative. In their own words, the name was creative and scholastic.

Member: Actually, we are creative and scholastic *so that's why we choose the name*

Member: Why we choose the name creative scholars is because what we are doing is a creative stuff and we are people with intellectual ability

Member: And when we go through everything, you notice that they are visuals. They are things that you can read too. Like also see like. So that shows that we are really creative, and we are classic.

Member: Everyone is creative. Only one person cannot just make the whole team be creative scholars. They put the "s" there for everybody. That's why.

Member: One person can bring from here and another person can still assist. One person can't just carry everything on his or her own (Team Creative Scholars)

Team Phoenix aka Kakarot, adopted their name (over other choices) because the name signified freedom and power to them. The team was convinced by a member to go for phoenix (a mythical bird) because of the strength and power the bird had displayed in films they had watched. Team Phoenix later added Kakarot to their name, as Phoenix and Kakarot had equal votes by team members. Kakarot is the name of a powerful character in an animation series called Dragon Ball. Team Phoenix aka Kakarot exemplified that their diverse opinions could co-exist using a democratic process. The team's choice of name displayed a need to exercise power and strength in a space where everyone's vote counted.

Member: Phoenix is a bird

Member: I thought of that connection.

Member: Phoenix is a bird. So like when he talked about the Phoenix. That it's a bird that is meant to fly high and free

Facilitator: Like freedom? [Member: Yes]. That's great.

Member: Another thing attached to that bird is that once it dies it grows from its ashes [lives again]

Facilitator: Okay, I'm guessing you watched this from films and movies

[Members Laugh]

Member: From Harry Potter (Team Phoenix aka Kakarot)

Team Teenagers Fighting Tobacco (TFT) chose their name because it represented them (as young people) and identified their perceived purpose for the project. This team perceived the study's purpose was for fighting/campaigning against tobacco use and chose a name that speaks for itself. The name also put them in the position of power doing the fighting and deciding how it would be done.

Member: Okay, first of all, we put our heads together, then after we checked round ourselves and find out that the people doing this research, we ourselves we are teenagers and the main goal of this research is to fight against tobacco. That was why we came up with the name Teenagers Fighting Tobacco

Facilitator: So were there other names?

Member: Actually there were other names like stars, you know excellent stars. And different different names came up, but we went for the best because this was; it was like explaining what we are just doing. We are teenagers campaigning against tobacco.

Facilitator: You know why I'm asking this question because I want to really understand why that name? Remember I told you all that even with the short time we have, if you decide you want to change the name later on as you work as a team, it's still OK. You did not change your name. Why?

Member: Because the new name was good the way it was. Like teenagers fighting the tobacco, everybody in the group we are all teenagers and our main goal was like fighting tobacco smoking [members chorus fighting tobacco smoking]

Facilitator: Alright, thank you very much. So particular reason was because you all are teenagers.

Member: Like it's mature, people can understand it's who we are about when we speak (Team Teenagers Fighting Tobacco)

The table below also shows the diary entries from each team explaining in their own words how they named their teams.

Table 7: Quotes from Group Diaries on Choosing a Name

Quote	Team
"The name Phoenix aka Kakarot was decided upon after a series of brainstorming and deliberation. The team first came up with the "Disney" and then "Phoenix", so we had to choose between the two of them. There was a vote and the name "Phoenix" got more votes". "After a while, there was another suggestion which was "Kakarot" and again there was a voting process and it was a tie, so we decided that our team's name should be "Phoenix aka Kakarot" to give respect to the voting process".	*Team Phoenix aka Kakarot* *(Workshop 1 - Diary)*
"We came up with different names like "The Health Cycle", "The Elite Team", "Team E.P.I.C (Every Person is Classic). And then we voted. Most persons loved the name "E.P.I.C" and that was how we came up with our team name".	Team E.P.I.C *(Workshop 1 - Diary)*
"The team comprising of 13 members/students got its name from collective ideas of the members. The name "Young Erudite Achievers" was first suggested but few agreed to it. The others kicked against it, suggesting "Emeralds/Gems". But then again, there was a short argument and the name was disagreed upon. *After much thinking and argument, the name "ERUDITE SCHOLARS" came up. So as to make everyone's idea count, we decided to add YOUNG, as we were actually young. This thereby gave us "YOUNG ERUDITE SCHOLARS" (Y.E.S)".*	Team Y.E.S *(Workshop 1 - Diary)*
"What made us arrive at the name progressive team is that when we make our opinion in the workshop it will bring progress and understanding to people out there in the world".	Progressive Team *(Workshop 1 - Diary)*
"We came to a conclusion after a long argument. A first name was proposed "Phoenix" but due to lack of	Excellent Stars *(Workshop 1 - Diary)*

understanding of the meaning we changed it to "Infinite Stars" which was also disposed. And so on high tension, we changed it to "Excellent Stars". And that we stand on".	
"All the group members joined together to form a name called "TFT" (Teenagers Fighting Tobacco). The name was given cause of the present issues of tobacco that teenagers are facing".	Teenagers Fighting Tobacco *(Workshop 1 - Diary)*
"We came to a conclusion that our name is going to be Creative Scholars by first of all getting ideas from each other, then the most suitable name was picked and was agreed upon by everyone".	Creative Scholars *(Workshop 1 - Diary)*

The activity of naming their team enabled the participants to commence team bonding while aiding them to simultaneously share power within the group and exercise control over what they would be called during the co-design process. Going forward, each team will collectively be referred to by the name they have chosen.

4.5 Workshop 1, Activity Five: Thoughts about Smoking among Participants

Participants in each group were asked to individually express their thoughts about tobacco smoking among young people using sticky notes. This activity guided them to put on paper their individual views. While the majority had negative perceptions about smoking (as shown in Table 5), their views were shaped by the experiences they witnessed among family members and other community members like their neighbours.

Participants shared that they thought smoking was mostly due to peer influence and the influence of family members. Participants thought that smoking was often an act of curiosity, reinforced by peer pressure and established when it became a habit. This habit would eventually metamorphose into an addiction and the use of other drugs which would become a problem for the wider community, as it would be accompanied by an increase in the crime rate.

Like maybe if you follow your friend out or something. If you see them smoking, maybe normally you know that you're not supposed to do it ooo, but they will just be pressurizing you; just try it. Try it, it's a small thing. Just try it. Finally, you try it and before you know you get addicted to it and continue and it may not really affect them the same way will affect you.... Participant (Team EPIC)

Participants relayed their opinions of how family-related conflicts had a direct link with susceptibility to peer pressure to smoke. They saw these conflicts as particularly destabilizing for young people, especially because they are affected by the happenings around them.

Member: Like for example, now if one's parents' divorce the thing can actually lead to depression for the young child and peer pressure will also add to it, as his already depressed from the divorce between his parents and the peer pressure now still join it. He can just start smoking.

Members: [chorus] And become addicted

Member: All these things are inter-connected. Family pressure can also contribute. Family pressure is a main factor. Because this family pressure, most times, it leads to depression and say it really leads to depression, which can, you know, cause that particular child or that particular youth to start smoking. And the essence of that smoking, the child, like his aim, his aim is to just feel free, to just feel high because he just…… You just think that there's no more hope for him, so let's just, let's Just do this thing and you know [get] high.

Facilitator: You know, when we started at the beginning. You kept making mention of smoking and then use of drugs. Do you think that these root causes that have been mentioned, are they specific just for people who smoke or drug use is also part of it?

Member: It's smoking. They get addicted to it and they'll be like …..

Members Interject: Let me try smoking higher……other drugs, cocaine, marijuana….

Member: Everything is connected to smoking, from smoking…….they go to drugs…from drugs they go to cult and they can get caught. (Team Creative Scholars).

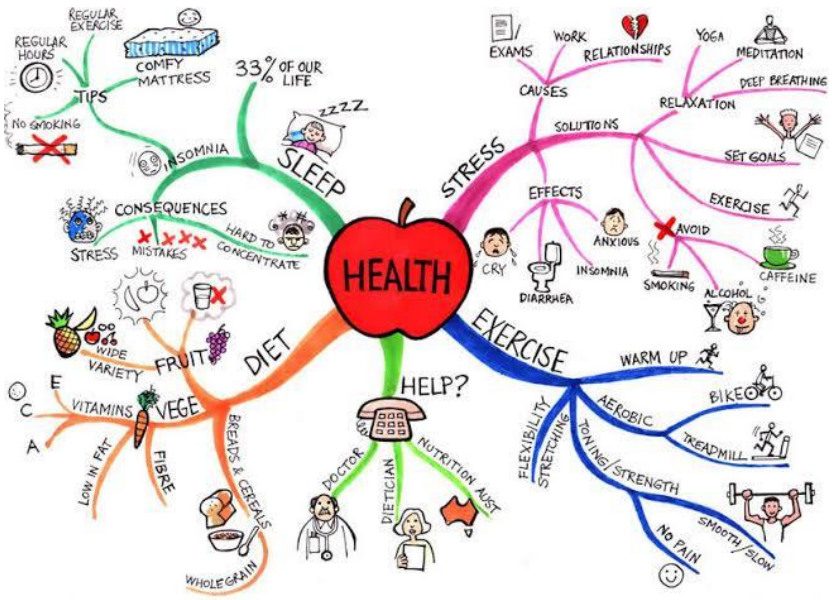
Some participants also disclosed they had friends and relatives who smoked shisha when their parents were not present and that most young people think shisha was just flavoured smoke that could not do much harm. They often attributed smoking to a lack of strong parental guidance and monitoring. This lack of guidance and monitoring was also attributed to parents working more to make more money due to economic hardship.

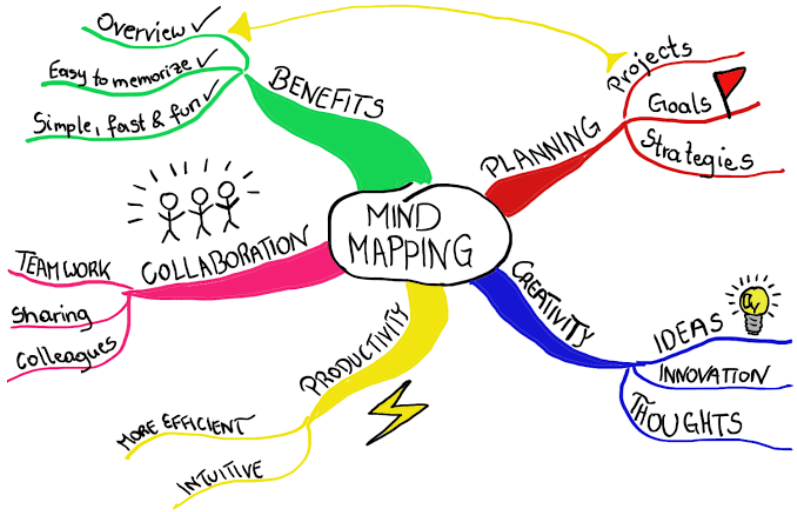
emmmmm because they are common among the young teenagers, like, for example, joining the bandwagons, it's mostly common during this our age like 14, 15, 16,17, and bad parenting background. Like these days, most parents don't really value their children anymore cause everyone wants to work and gain money. Because Nigeria everywhere is harrrrrd and it's hard. The standard of living has increased greatly... (Participant, Team YES)

4.5.1 Individual Mind Mapping

After writing their thoughts about "smoking among young people" on sticky notes, participants were further encouraged to draw mind maps based on their written thoughts. Participants were shown three examples of mind maps and encouraged to use "smoking among young people" as the central focus for their mind maps. This activity guided them to reflect on what they had written on their sticky notes and expand on it using the structure of a mind map. This activity also facilitated establishing their individual views in preparation for group discussion and decision-making. All participants were asked to attach their sticky notes to their mind maps to aid in understanding what they had put in the mind maps.

The mind maps emphasized what participants had mentioned during the discussion but also showed there were some misconceptions about the effects of tobacco use and the effects of other drugs like cannabis (popularly called Igbo). Participants identified madness (expressed in behaving abnormally in public by walking barefoot or without clothing) as a key feature of the negative health effects of smoking. This misconception was addressed in the successive co-design session, after I went through the mind maps. Examples of structured samples and drawn samples of individual mind maps are shown below.





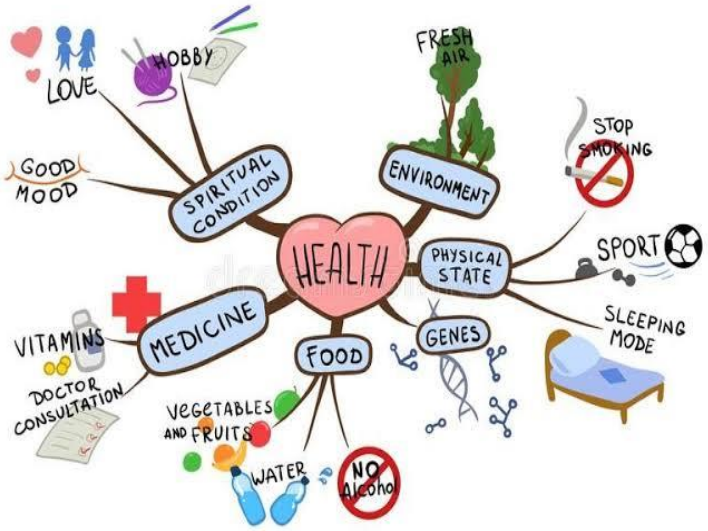
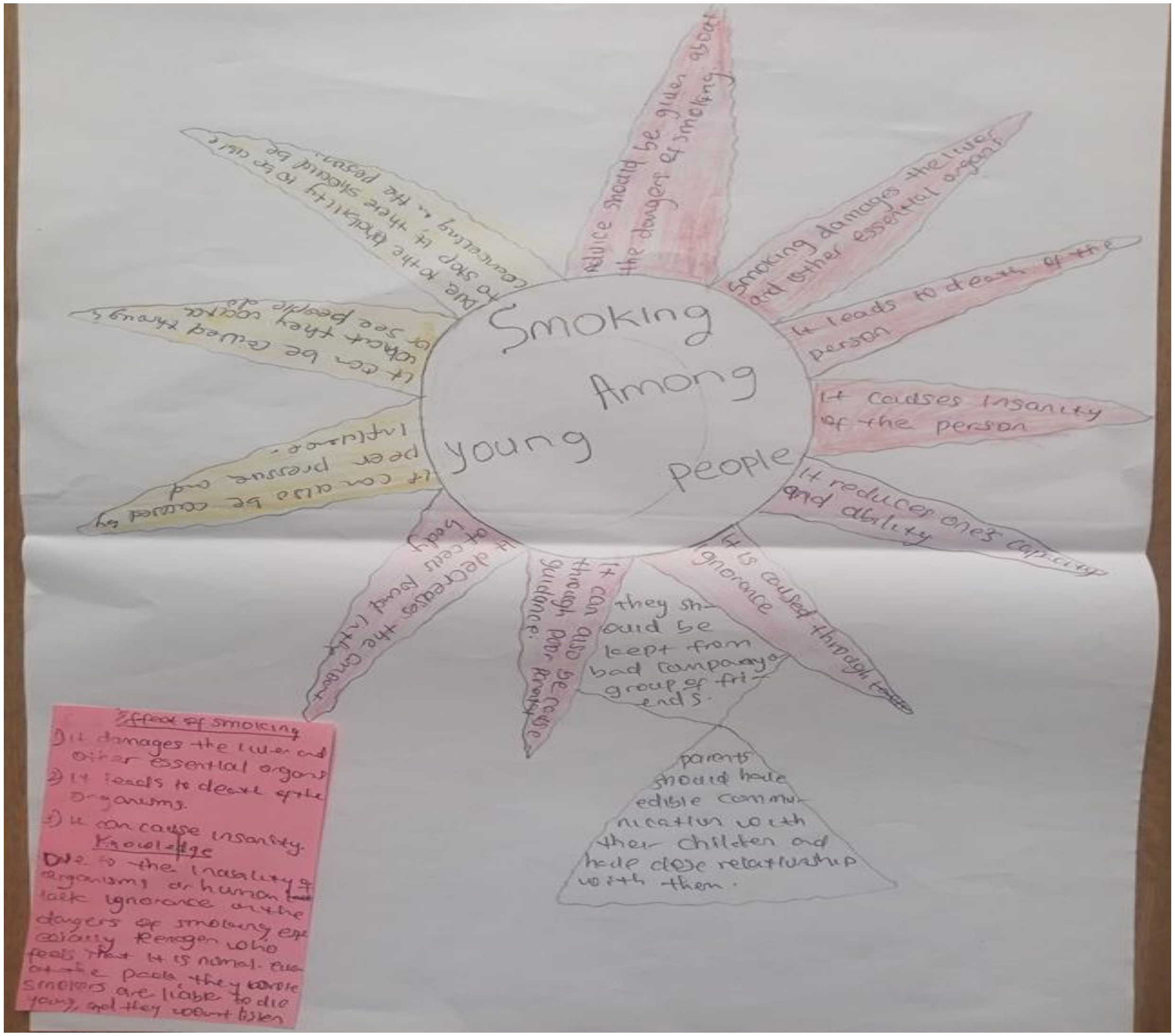


Figure 13: Examples of mind maps shown to participants


Smoking Among young people
Advice should be given about the dangers of smoking
Smoking damages the liver and other essential organs
It leads to death of the person
It causes insanity of the person
It reduces ones capacity and ability
It is caused through ignorance
they should be kept from bad company group of friends.
parents should have edible communication with their children and have close relationship with them.
It can also be caused by peer pressure and influence.
It decreases the
Effect of smoking
1) It damages the liver and other essential organs
2) It leads to death of the organisms.
3) It can cause insanity.
Knowledge

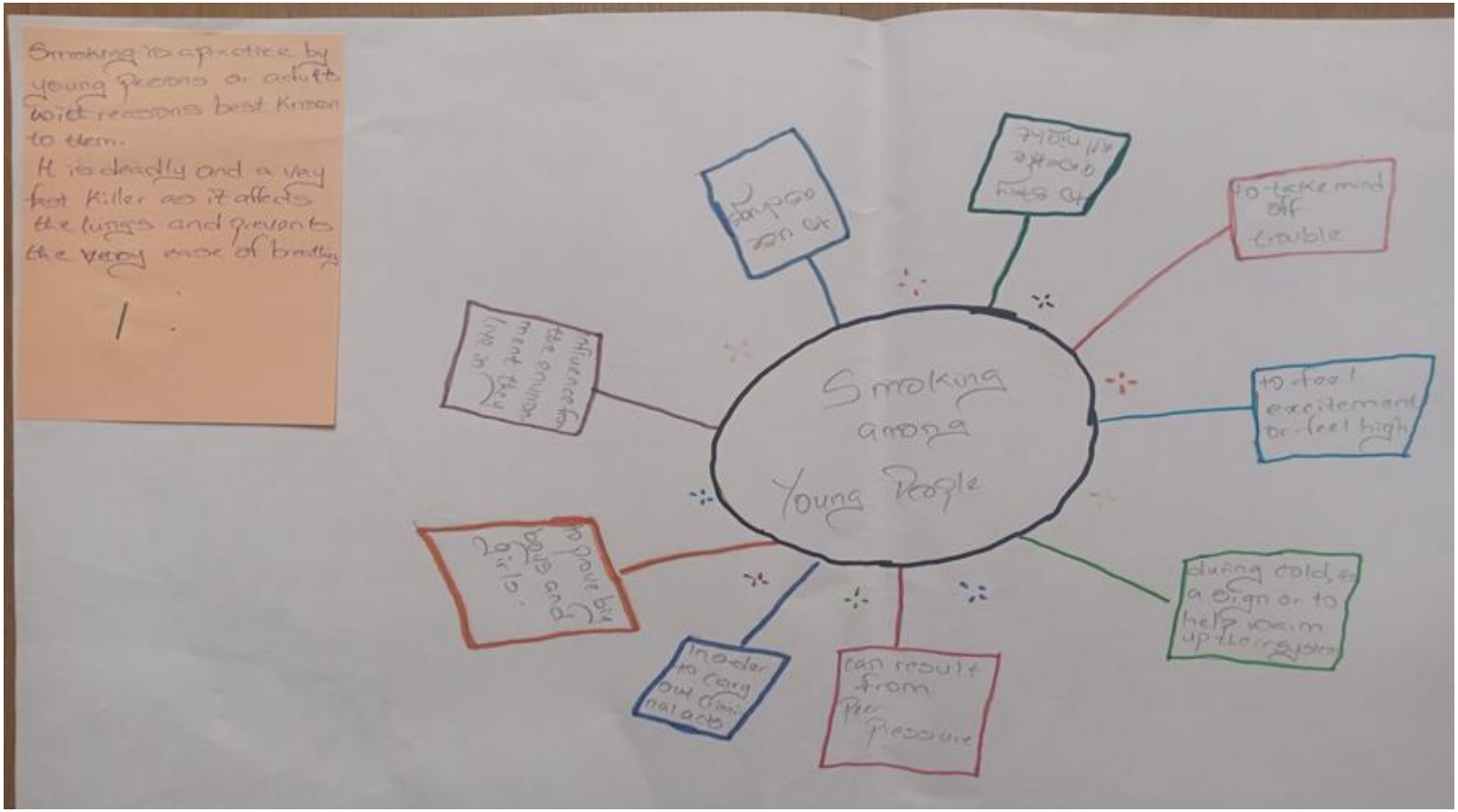


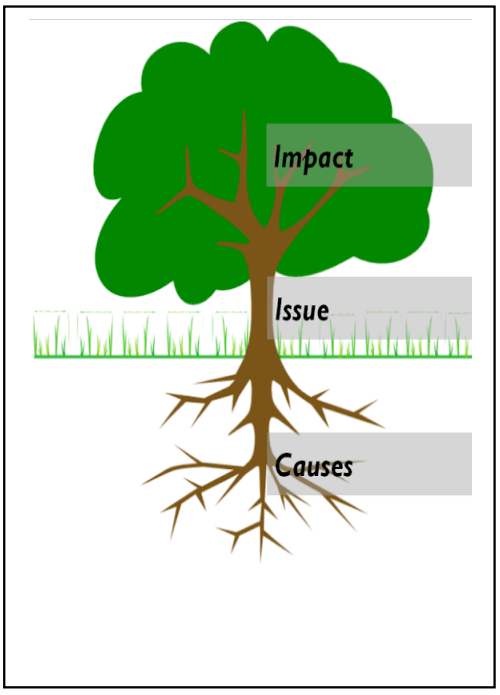
Figure 14: Examples of Individual mind maps: Team TFT and Team Excellent Stars

4.5.2 Deciding on the problem tree

In facilitating the process of building from individual knowledge to group knowledge, participants wrote the causes of smoking among young people on sticky notes, created their individual mind maps, and came together to decide what they thought were the vital causes that should form their team's problem tree. Participants were also provided with examples of a problem tree.

In the process of drawing their problem tree, each team was able to discuss, analyze, and co-decide what was most important for them to put in the problem tree. The problem trees from the seven teams are shown in Appendix 17. The examples of a problem tree used by participants during the activity are also shown alongside the problem trees of Team EPIC and Team Phoenix.

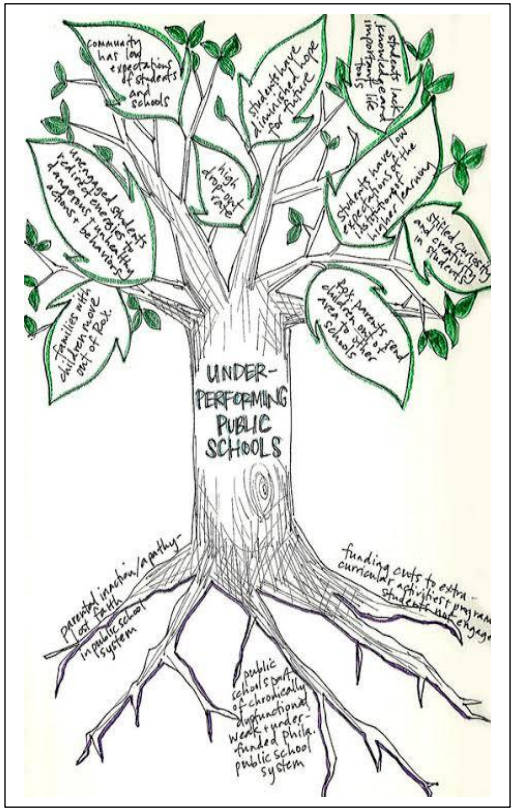
Structured Example



Drawn Sample (Team E.P.I.C)

Figure 15: Structured Sample & Drawn Problem Tree (Team E.P.IC)

Structured Sample **Drawn Sample (Team Phoenix aka Kakarot)**



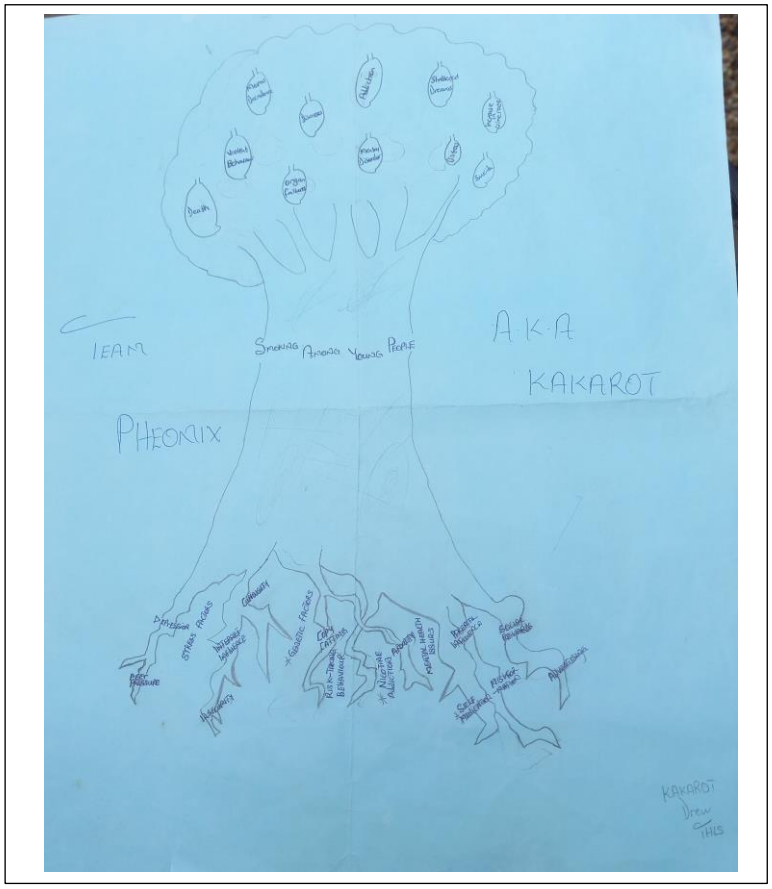


Figure 16: Structured Sample & Drawn Problem Tree (Team Phoenix aka Kakarot)

A cumulative problem tree representing the combined root causes of smoking among young people as identified by all seven teams is presented below in a word cloud. Using the word cloud to present the data from the seven teams gives a visual snapshot of the thoughts of participants regarding the root causes of smoking. However, only four of the five initial themes from the discovery session was reflected in the word cloud. The analysis of discussions with the teams, revealed the fifth initial theme (See 4.5.3).

Figure 17: Word Cloud showing the cumulate root cause of smoking among young people

4.5.3 Key Themes from Problem Trees

At the end of the discovery session, participants drew a problem tree representing the collective thoughts of their team on the root causes of smoking. Analysis of the seven problem trees revealed five main root causes of smoking: peer influence, family influence/background, mental health challenges, social media influence, and environmental challenges.

4.5.3.1 Peer Influence

Peer influence was repeatedly highlighted as a significant root cause of smoking among young people and linked as a direct cause of addiction. Although given varied names such as peer pressure, bad friend, bad company, and bandwagon; the problem trees across the seven teams showed that participants saw peer influence as a key issue. During the discussion, participants emphasized the pivotal role of peer pressure among young people who were influenced by "bad friends" to "just do it" or "just try it" and personally confirm that smoking is no big deal. A participant from the progressive team described peer pressure as having a bad friend who belonged to a cult group and wanted their friend to try smoking because it was something others were also doing.

OK, I'll take that bad company. For example, you have a bad friend or let me say a cultist as a friend. Most cultists they do smoke; it's just like a normal thing to them. So when you are a friend with them, they must surely initiate you and ehhhhhh surely you will also be a smoker and be a bad guy like them. I will say bad company or even bad friend that will say Just take it, just one sip nahh. So anything they say to you is not good for you, they will even make you feel that what you are doing is not bad. So they just say do it nahhh, no be everybody dey do am for here?..... (Participant, Progressive Team)

In contrast, some participants described peer pressure as an act of curiosity or ignorance propelled by "bad friends" which eventually led to an addiction. They described the process of addiction as starting from curiosity, moving to enjoyment, and then to an uncontrollable habit (addiction). Their views of tobacco smoking intertwined with their observations on drug addiction within their environment. They often equated being addicted to tobacco smoking as the same as being addicted to other drugs. Some participants who had parents who sold tobacco products recounted how some people would plead to be given cigarettes for free if they had no money to purchase them. An excerpt from a discussion with Team Phoenix captures their thoughts on curiosity and ignorance as a propelling factor for smoking among young people.

Member: For example, when you see someone smoking and then the person that tells you see… you don't know why or you don't know why the person is doing it. [Member: children playing] Yes, children. So they want to do it. Do what the person is doing. To see what will happen.

Member: Like for children they might start it with something. If they cannot go and buy it, they might start with rolling paper and then light it.....

Member: Maybe you just go out with your friends and they say just take this one; just take it [Members laugh] just try it. Put it in your mouth. Smoking is fine. Then another day you will now think of it of it again. That first time was ignorance ooo. The second one was like maybe you like it or something. Then you keep on going.

Facilitator: So the first one, you said ignorance, but I was also getting a sense you were also saying curiosity…

Member: Yes, I got that as well (Team Phoenix)

Participants also underscored family influence/background, mental health challenges (depression, heartbreak, emotional damage, stress, anxiety, overthinking); social media (media/internet influence); and environmental challenges (poverty/unemployment, insecurity) as the root causes of smoking among young people.

4.5.3.2 Family Influence/Background

Participants acknowledged the dual influence (positive and negative) of family on young people. They highlighted the influence of parents on their children which could either approve or disapprove of the habit of smoking. Parents who showed poor parental care or parents who smoked or sent their children to purchase cigarettes were displaying to their children that smoking was acceptable. On the other hand, parents who paid keen attention, offered guidance, and monitored their children's activities would foster a non-smoking habit and prevent other unhealthy habits.

Facilitator: OK, about family background; anything anyone wants to say about that?

Member: Okay, most times in family background maybe due to circumstances, the father and the mother may have like a bad influence on the children. For example, if a parent, maybe the father is smoking. The child might see the father and be like, OK, my father is smoking, so it might be a good thing and the child wants to try it. So after doing that, the child will get addicted to smoking. But later, maybe when he finds out that it bad, he will now know that he followed the wrong footsteps of his father.

Member: In addition to what she said, the child might not see the father taking it. The father can just send him message now to go and buy it somewhere and the child on his way gets it and is like, let me just try it.

Member: Like what you said that the father will send the child on an errand to go and buy it and on the way the back home the child will feel like why does the father always take the the [Member interject: the cigarette] always smoke, like if he's healthy. If he contribute any good, good stuff to the father. So he will like, want to know the reason why the father used to take it. So from there the child will start smoking. Get interested [curious] in smoking. (Team EPIC)

4.5.3.3 Mental Health Challenges

Participants mostly described mental health challenges due to family conflict, and high cultural and academic expectations as propelling factors that fostered smoking among young people. Depression and stress were often linked to family conflict while anxiety and stress were linked to high academic and cultural expectations.

Depression and stress from family conflict were described in relation to divorced parents or lack of parental care. On the other hand, anxiety and stress from academic expectations were described in terms of being expected to always perform excellently and achieve high grades in school. Similarly, cultural expectations were described in relation to high expectations for male children (especially the first child) to be financially responsible for keeping the family above poverty. Participants also linked coping with these challenges to smoking for temporary relief, which eventually ends in a cycle of addiction as the challenges remain unresolved. A participant in team progressive team explains it further:

First of all, we get depressed at schools by peer pressure. For some that have bad home, their parents are not in good terms and condition with everything they feel depressed and secondly from what I have experienced depression is caused by many things. I can be depressed because my friend asked me to smoke and I said no. I can be depressed because my father and my parents have problems and they are not giving me attention. A normal home is supposed to have attention, all the attention a child needs. They are not giving you attention.

Then your friend now come and say start smoking. Are you say no? You feel depressed after some time, you now start having that thoughts. Your friend say that you should smoke and the smoking enhhh it will take away your problem. Why not just follow it. Maybe at that point you have not received any advice or nothing and you are just trying to think of a solution to your problem. You are now like OK, I should smoke, maybe smoking will help to at least reduce the depression or can even take away the problem. If you smoke the tobacco after some, let me say for five hours you might not think of that problem, but one way or the other, the depression must come back and if you come back you still remember the smoking and somebody that do something very often becomes an habit. Or an addiction to the person. So as for example, you are 16 years, you start smoking that 24 hour. I don't know if your lungs is still working again, so that's it. (Progressive Team)

4.5.3.4 Social Media Influence

While participants identified social media's influence on tobacco use, they spoke about it as being influenced by activities on social media platforms, and by key persons in the Nigerian movie, and music industry. This view was shared by both male and female participants, who also thought that popular role models could influence the choice of young people to not engage in tobacco use. Although movies and social media were acknowledged as a tool of influence, it was also described as a means of reaching young people to pass on the message about not engaging in tobacco use. Participants were highly optimistic about using platforms like TikTok, WhatsApp, Instagram, and Facebook for advocacy messages. The statements from participants in Progressive team and Team TFT further highlight their thoughts.

In the media, I can say when you see a movie whereby the actor is smoking and you like the way the actor acted that movie and say ahhhhh this person is smoking nahh why did they say smoking is bad when my mentor or someone I'm looking up to is also smoking so, it's not a bad thing. It all depends on what they see that's why most of those movie is 18 so that people that can help control their thinking but if the person is not up to 18, he can think that it's just a normal thing and start smoking (Participant, Progressive Team)

Using series, TV station or other stations you can do adverts. Put it on media, on TV. And show them the signs, the effects that happens when you take tobacco, just like when you posted on WhatsApp. So once they watch the video and they see the disadvantage of smoking, having that might change their mind and you put more effort with your mouth and show them some flyers, some things so (Participant, Team TFT).

4.5.3.5 Environmental Challenges

Participants also identified environmental challenges (poverty/unemployment, insecurity) as a recipe for tobacco smoking, use of other drugs, and eventually addiction. Though they acknowledged that education was vital to fulfill future dreams, they also acknowledged the lack of job opportunities and economic prospects after school as a key factor for tobacco use. Participants also linked the lack of jobs and unemployment to insecurity in the wider society. They thought that when young people are idle with nothing tangible to keep them busy, that they would lean more toward becoming a social nuisance because "an idle mind is the devil's workshop". The discussion with participants from Team TFT encapsulates the thoughts of young people about unemployment, tobacco use, and use of other drugs.

Member: If there is no job that's why you see many of our youth today, ask them what made them to go into these things? They will tell you number one no job . Number two, they will tell you family background, the kind of family they came from. Then they will tell you that they are not [pauses a little] they don't feel like emmmm I don't know how have to put it. They don't feel like they look at them as somebody, they just ignore them, that they are just nothing today. That's why you see many people go through that and one of the things was unemployment

Member: You know, there's a saying that goes like this. An idle mind is the devil's workshop. If the person has nothing doing like he's there 247 the person is very open to this intimidation, peer pressure. The person that has a Job will not have time to see the people that, will tell him that - try it, try it nahhh it's good, it's good. But if the person is idle even without anybody telling him, he will just sit down and start thinking; something will just take his mind there.

After [the person will say] let me just let me just try it nahhh, maybe it will taste nice or if the person is just bored the person might just start smoking. People like that they just sit and when you say why are you smoking now? They will say wentin i go con do nahhh. They are just bored. They just want to…..they will be taking [pauses a little] drugs. (Participants, Team TFT).

The discovery session was used to elicit information about the root causes of smoking among young people. This was done using various activities to clearly identify the root causes as seen by people. The methods used also enabled participants to capture the causes of smoking verbally and visually.

Overall, the root causes identified by the participants were closely linked to people and places associated with them. Peer pressure and family background were directly linked with people. Environmental challenges were linked to people and circumstances. Social media (influencers and social platforms) and mental health challenges were linked to people (family, peers) and places (school, society). This justifiably reflects the people and places young people are linked to.

In this co-design phase, participants were engaged in a workshop with five consecutive activities. These activities included: creating groups, using the GYTS questionnaire, co-creating guidelines for the co-design workshops, naming participants' group and drawing and discussing their thoughts about smoking using a problem tree. Participants from the seven teams were able to co-decide on the root causes of smoking in their community.

In the next phase in the co-design process (idea generation), participants would use the root causes of smoking they have identified to generate anti-smoking messages targeting young people like themselves, relatives, young people in their locality/school and young people in society.

4.6 Reflections

Participants were asked to form groups that incorporated a mixture of male and female participants from the three disciplines in their school. As the facilitator, I tried to work with the different groups while constantly reiterating that the process was a participatory one and not a lecture/schoolwork, despite conducting the workshop within their school environment. By working with participants who were segregated into groups and using the discipline structure well known to them, I was able to pass the message that the process would be democratic and require their participation. While this method of grouping was not the best (some participants were not confident about some people in their team), it was a structure the participants were familiar with. They acknowledged that they would need to work together to accomplish group tasks. As the facilitator, I also ensured I was observant to pick up on verbal and non-verbal cues to ensure that participants felt involved and carried along in this phase. I also maintained consistent communication with the assigned school chaperone to keep abreast with information or occurrences that could directly or indirectly impact participation.

The process of discovery is not an equal process for every group. Some groups were quick to decide on what they wanted to express while others were not. However, using a method (structured participant-led drawing) that started from individual reflection to group activity allowed each team to eventually arrive at an agreed output adopted from collective individual input. In doing so, most members of each team were involved in the analysis process in determining what they thought was vital; which formed the basis of my analysis and presentation of data.

CHAPTER FIVE

RESULT

IDEA GENERATION: FROM PROBLEM TREES TO IDEA CLOUDS

Overview

This chapter provides details on the second phase of the co-design process - idea generation (Mechelen, 2016). It reports the process and activities carried out during the workshop such as presentation of data (Word Clouds) from the co-design workshop, and highlights how participants' misconceptions from the discovery phase were addressed. It also highlights the intricate process of facilitating idea generation aligned with different groups while using the four-level structure of the Socio-ecological model (CDC, 2024). The structure of the Socio-ecological model is used as a template to guide participants in framing their messages and campaign goals to align with their context as young people, as this also supports the philosophical and methodological underpinnings of the study. The framing provided by the Socio-ecological model is used to guide data collection and thematic analysis.

5.0 Introduction

Idea generation is the second phase in the co-design process. The idea generation phase was aimed at generating a broad range of ideas (messages) on ways to tackle the issues identified in the discovery phase. After generating a range of ideas, the ideas are narrowed down by assessing if they meet a co-decided set of criteria (McKercher, 2020), or a defined goal (Mechelen, 2016).

The idea generation session was done using a workshop. The idea generation workshop in the co-design process was aimed at involving participants (from the seven teams in the two schools) in generating a broad range of anti-tobacco messages relative to the identified root causes of smoking (from the discovery workshop). The five key root causes of smoking that the teams identified included; peer influence, family influence/background, mental health challenges, social media influence, and environmental challenges.

In the idea generation workshop, the seven teams made use of the root causes of smoking that they identified in their problem trees from the discovery workshop to identify appropriate anti-tobacco messages. This broad range of anti-tobacco messages was then streamlined to a few messages based on what the participants thought was important for young people.

Following the defined pattern for idea generation proved a bit difficult for most participants. Participants were not able to generate anti-tobacco messages by only using the word clouds of the root causes from the discovery workshop. To adapt the defined pattern for idea generation to best suit the purpose of the study (involving young people in tobacco control health communication), the process was modified while maintaining the (individual) writing and (group) structured drawing pattern from the discovery phase.

To enable participants to elicit ideas for anti-tobacco messages, the idea generation phase was addressed by:

1. Presenting word clouds of mind maps and root causes of smoking in the problem trees from the discovery phase and addressing some misconceptions that participants had
2. Playing videos of previous anti-tobacco campaigns by the World Health Organisation and Nigeria Federal Ministry of Health to stimulate inspiration for message generation
3. Inviting participants to decide on a campaign theme or slogan that they wanted to focus on based on the root causes of smoking from the discovery phase
4. Providing a four-level structure for participants to categorize selected messages based on a campaign goal: Individual, family & friends, community/neighbourhood, and society

These four steps, though listed seemingly sequentially, were not a linear process for each of the seven teams. Some teams found it easier to start from step two, move to step one, and return to step two before proceeding to steps three and four. Some others started from step one, moved to step two, proceeded to step four, then returned to step to step three before re-doing step four. As the facilitator, I worked with each team depending on what worked best for them. In attempting the idea generation phase of the co-design process this way, each team was actively involved in deciding what their anti-tobacco message should focus on.

5.1 Workshop 2, Activity 1: Presenting word clouds and addressing misconceptions

Participants were presented with the two word clouds created from the mind maps and the root causes of smoking in their team's problem trees. The word clouds were created using a free online word cloud generator (https://www.freewordcloudgenerator.com/generatewordcloud) that the participants could also access and use if they wished to. I also showed the participants how to generate the word clouds using the root causes of smoking they identified.

Combined Mind Map

Combined Problem Tree

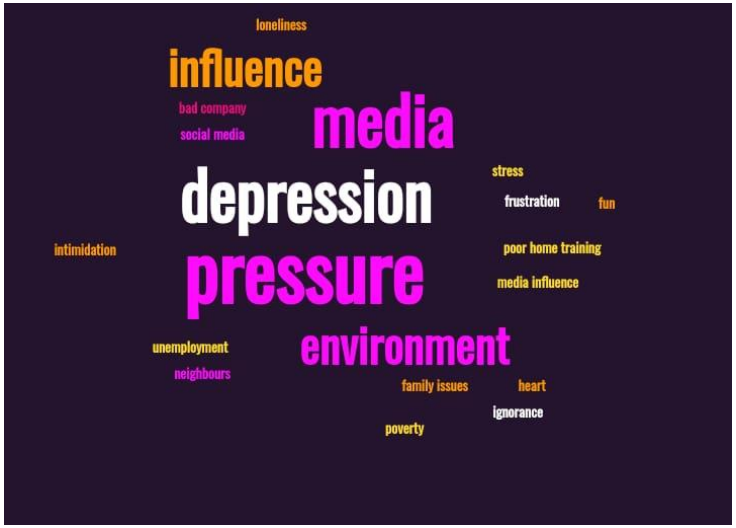


Figure 18: Word Clouds from the Mind Maps and Problem Trees of Seven Teams

Figure 18a: Team Creative Scholars, Team TFT, Progressive Team & Excellent Stars

Combined Mind Map

Combined Problem Tree

Figure 18b: Team Phoenix, Team YES & Team EPIC

The presentation of the mind maps and root causes of smoking using word clouds enabled each team to see the issues they had identified alongside those identified by other teams. The word clouds gave each team a visual representation of the issues they had all identified cumulatively. Each team was fascinated to see if what they had contributed was also represented in the "universal word cloud" and went further to make some comparisons. The teams also had their problem trees at hand and compared what they wanted to change or retain. The process of making comparisons enabled participants to be involved in another level of group analysis, similar to how they co-decided on what to add or not add to their team's problem tree. This process enabled participants to reflect and re-confirm their choices.

Progressive team, Team TFT, and Creative Scholars showed their assessment of the word cloud in their second diary entries where they compared how similar or dissimilar the universal word cloud was from their group's word cloud. The structure in which the teams wrote in their diaries about their comparisons differs. This is because each team was only instructed to write about how they made group decisions but were not provided with a structured format to do it. While Progressive team used a list and a table to show their process of comparison, team TFT and Creative scholars both used a list. The level of detail provided also differed as creative scholars also explained the difficulties that they experienced in selecting their team's campaign goal. The diary entries from Progressive team, Team TFT, and Creative scholars as shown below demonstrate the different ways in which each team processed the information they saw in their word clouds. Their diaries also reflect the different ways participants chose to enter details, as they were not given a structured method for entry.

Progressive Team Diary Entry 2

"We noticed that the universal word cloud has bad friend, and peer pressure but there is none of them in our group word cloud. The similarities between our group word cloud and the overall word cloud are lungs, death, cancer, mental disorder and damage body".

The differences between our group word cloud and the overall word cloud are:

Progressive Team Word Cloud	***Universal Word Cloud***
Pain	*Nil*
Nil	*Bad Friend*
Nil	*Peer Pressure*
Reddish Eye	*Nil*
Buying of Cigarette	*Nil*
Focus	*Nil*
Smoking	*Nil*

Similar to Progressive team, Team TFT and Creative scholars also highlighted the similarities and differences that they noticed which they recorded in their diaries. The similarities and differences were used to aid their decision in choosing a campaign theme (step 3) and selecting the messages in four levels (step 4). Each team showed keen commitment in deciding on their campaign message. This commitment was demonstrated as some teams reportedly used their break periods and met several times after the idea generation workshop to decide on what they truly wanted to say.

Team TFT Diary Entry 2

Similarities: *Peer Pressure, Depression, Social Media, Influence, Lungs, Mental Disorder, Children, Advice, Bad Friends, Education Performance*

Differences: *Big Girls, Big Boys, Damage Heart, Pain, Prevent smoking, Drug, Family, Kill, People, Air Contamination, Close Relationship*

Creative Scholars Diary Entry 2

We are eleven in our group. In today's meeting, we had a new member joining the team, which made us twelve in our group. In the mind map, we saw new words/idea

These are some of the new words we discovered: Big Boys/Girls, Discrimination, Performance, Air Pollution, Parents, Body System, Intimidation, Home training, environment, loneliness, pride, stress, frustration, drug, education, neighbours, anger, bad company, second hand smoking respiratory problem

We also discovered some similarities; Pride, fun, social media, depression, peer group, much thinking, madness, damage, lose memory, death

Environment – Air Pollution

Friends – Peer Pressure

Health – Madness

On 8th June, we had a meeting, and we were thinking of a theme or slogan we can use to tell a person who smokes. There was little argument on our decision, but we later came to an agreement. Hashtag "Teamwork"

Finally, on 9th June, we came to a decision and among the group members we decided that our slogan will be "PUT IT OUT BEFORE IT PUTS YOU OUT". Well, we had a hard time choosing this slogan because everyone brought a different idea and it really confused us. But at the end, we came to a final decision. We were also able to finish the drawings and writing all together.

The process of presenting and comparing the word clouds also helped to identify a misconception held by many participants. Participants were prone to mixing up the effects of using other substances like cannabis with the effects of tobacco smoking, given that they were witness to the public misdemeanors of adults who were under the influence of cannabis popularly referred to as "Igbo". In the diary entries above, Progressive team and Team TFT listed this misconception as "mental disorder" while Creative scholars listed it as "Health - Madness". This misconception is also reflected in the combined mind maps as a "mental problem and mental illness"'. Most participants in the seven teams across the two schools believed smoking made people prone to episodes of "disgraceful public behaviour". Participants were conversant with witnessing the public display of people who smoked other drugs like cannabis and associated the same display with people who smoked tobacco products. Public displays like loud non-stop un-rhythmic singing, and dancing on the streets without clothes are some examples of the types of public displays they have encountered. These displays were referenced as having a "mental disorder" or madness" and were consistent across the mind maps of most participants. Before proceeding to the next step, we addressed this misconception to enable participants to generate appropriate anti-tobacco messages. An excerpt from the idea generation workshop showing how this misconception was addressed is described below.

Facilitator: *In the overall mind map, I saw words like lungs, damage, big boys, big girls and I understood why you put those words after I checked the stick notes attached to your mind map. But there are some few questions I want us to address, one of which is some persons were mixing the effects of what you popularly call Igbo with the effects of smoking tobacco products. But it is also called cannabis or marijuana. The effects are similar, but they are not the same.*

When tobacco products are smoked the substance that is distributed into the blood stream is called Nicotine, while that of cannabis is called cannabinoids. I'm not sure I spelt it well.

So, the effects are similar, but they are not the same.

Facilitator writes on the flip chart in front of the hall.

How are they similar? The substances released when both are smoked can be more than 4000.

For tobacco, more than 70 causes cancer while for cannabis, more than 50 causes cancer. Tobacco smoking accelerates to lung cancer in people faster that cannabis. We are not saying cannabis is good. None is good. But this one (points to tobacco) is the oga kpatakpata of them all.

Chorus: *The Odogwu!*

All laughs

Facilitator: *So another thing I noticed people did, it is not wrong, but i want to correct it so you don't mix it up. In the chart in the questionnaire you filled, you saw different types of tobacco products right?*

Chorus: *Yes*

Facilitator: *There are two major types, what are they?*

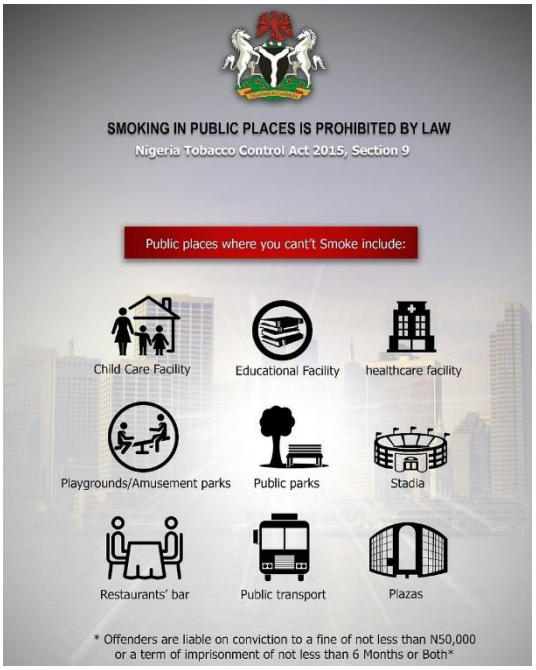
Female participant from progressive team answers*: Smoked tobacco and smokeless*

Facilitator: *Thank you. Smoked and smokeless. It is not all types of tobacco that will bring smoke. There are some that will produce smoke while others will not. For instance, Snuff that people take, it does not bring smoke but it is tobacco. (See detailed transcript in Appendix 18)*

5.2 Workshop 2, Activity 2: Playing videos of previous anti-tobacco campaigns

After addressing the misconceptions about tobacco smoking, we proceeded to watch some campaign videos and posters. The videos and posters were from anti-tobacco campaigns by the World Health Organisation (WHO) and the Nigeria Federal Ministry of Health (FMOH). We played the videos to stimulate inspiration for generating anti-tobacco messages and allow participants to see what a campaign video and other campaign materials could look like. The videos and posters also illustrated how campaigns always had a theme or slogan that aligned with the messages created.

Nigeria FMOH Prohibition Law 2017



Nigeria FMOH Tobacco Control Law 2017

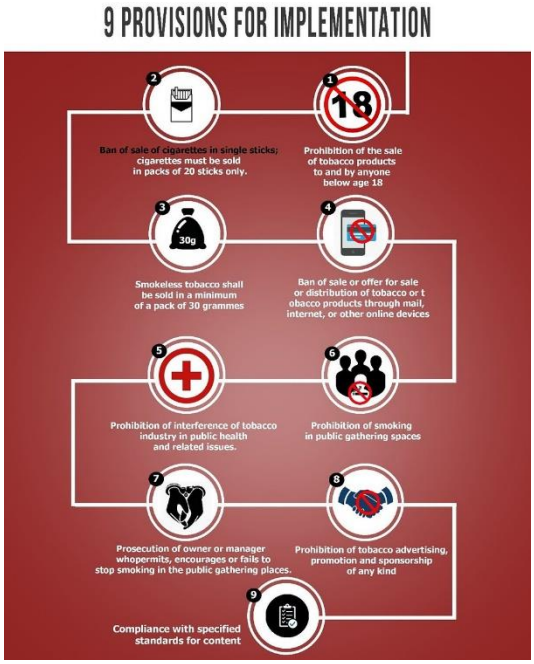


Figure 19: Nigeria FMOH Anti-tobacco Campaign Materials

WHO WNTD Poster 2018 **WHO WNTD Poster 2022**

Figure 20: WHO Anti-tobacco Campaign Materials

Thus far, Nigeria has engaged in six anti-tobacco campaigns (2000 – 2021) to commemorate the World No Tobacco Day. First, participants were taught about World No Tobacco Day and allowed to ask questions as the majority had never heard of it. Then, participants were shown posters, infographics, and videos from the campaigns by the World Health Organisation (WHO) and the Nigeria Federal Ministry of Health. The links to these campaign materials were also shared to enable participants to access them whenever they wished. The campaign videos were highlighted in Chapter 2, Table 4).

As participants watched the WHO campaign videos, they paid keen attention to the campaign materials that showed pictures of the heart and a video that had a young child teaching adults about the effects of tobacco smoking. In the workshop, participants in the government-owned school requested to watch this particular video twice so they could listen to the child speak.

Participants also paid attention to the infographics from the Nigeria Federal Ministry of Health, which highlighted the tobacco control laws and non-smoking structures (parks, schools, restaurants) in the public.

5.3 Workshop 2, Activity 3: Deciding on a campaign theme and generating messages using a structured sample

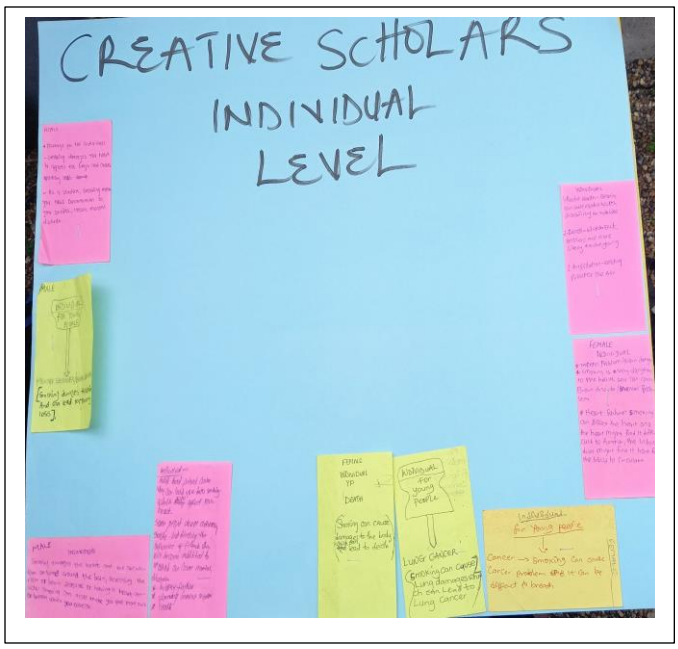
After participants watched some videos and posters created by the Nigeria Federal Ministry of Health and the World Health Organization, they were asked to generate anti-tobacco messages that aligned with the root causes of smoking they identified. To further facilitate the process and enable participants to take an active role in generating the messages, a template was provided. This template stems from the CDC four-level socio-ecological model (CDC USA, 2024), which is a health promotion framework used to provide a complete perspective on factors influencing health and associated strategies and interventions for health promotion. The four levels are; Individual, family & friends, community/neighbourhood, and society.

Generating anti-tobacco messages using the four-level template and deciding on a campaign were closely intertwined. This is because some teams were able to generate messages using the four-level structure before deciding on a campaign theme; while others found it easier to generate messages after deciding on a campaign theme.

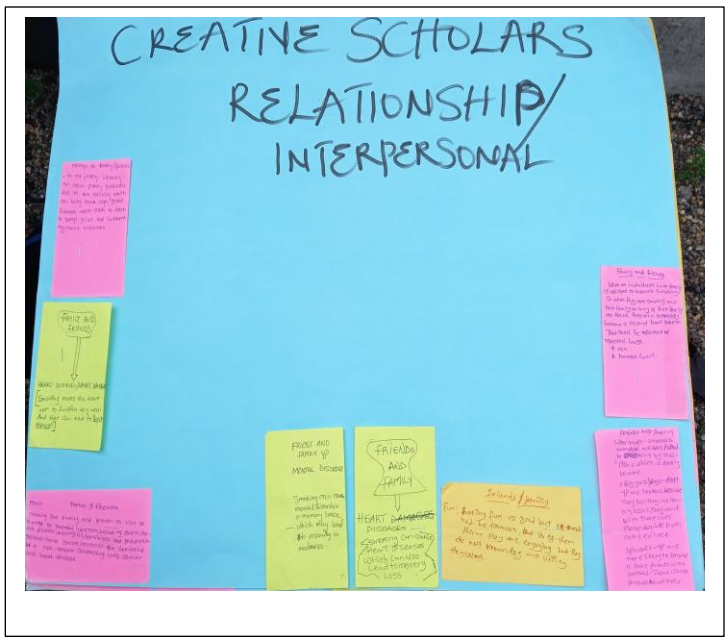
At first, participants were asked to individually use sticky notes to write messages at four levels based on their word clouds and afterward come together as a group to decide which messages they wanted to place at each level in their team's drawing.

Team Creative scholars were able to follow this process. They started by writing messages they thought were appropriate on sticky notes. After which we proceeded to place the sticky notes on different cardboard to enable us to see the messages for each level at a glance. Most of the messages focused on the deadly effects of tobacco smoking which eventually influenced their selected campaign goal: "Put it out before it puts you out". They also went a step further to produce drawings of a man lying in a coffin and another throwing a cigarette into a waste bin, to further buttress their campaign goal.

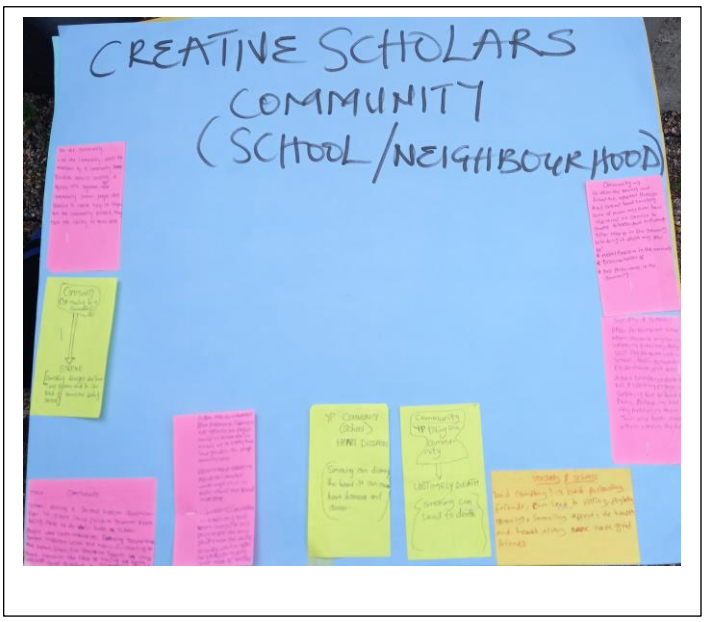
Individual level



Friends and Family



Community



Society

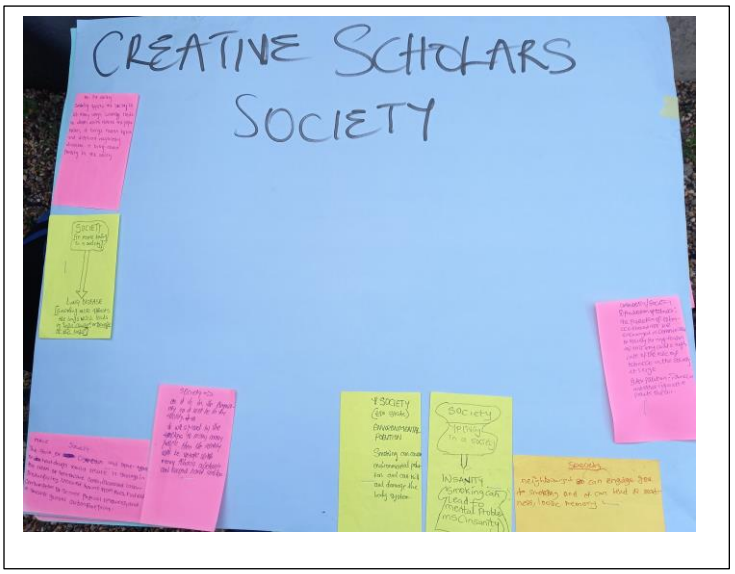
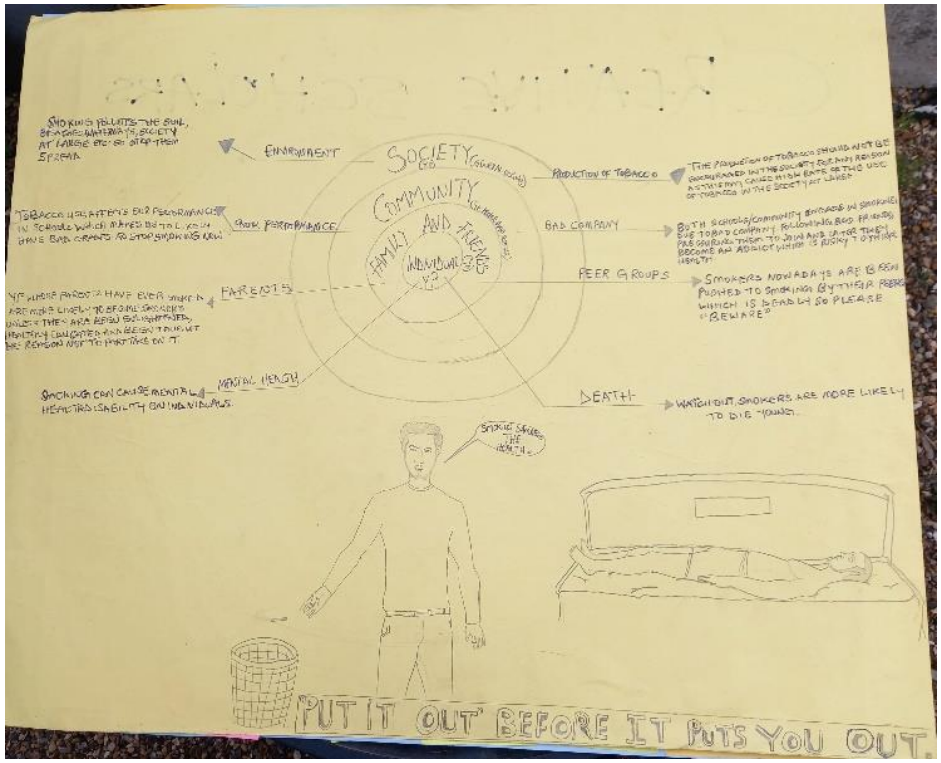


Figure 21: Message Samples (Creative Scholars)

Unlike Team creative scholars, Team TFT took a different approach. Team TFT discussed amongst themselves and decided that they wanted to highlight the effect that tobacco smoking had on the brain. They called their campaign theme; Tobacco and the Brain. Upon deciding the theme, they gradually generated messages that focused on the theme they chose. Also, unlike the Creative scholars team, Team TFT chose to add their drawing to their team's diary rather than in their team's four-level message template. Team TFT showed with their drawing that the more one smokes, the more addicted one becomes. They illustrated this using an individual walking on a road towards a house. The drawing of the house was in three levels. The first level was addiction, the second level was depression and the final level was death.

Creative Scholars **Team TFT**



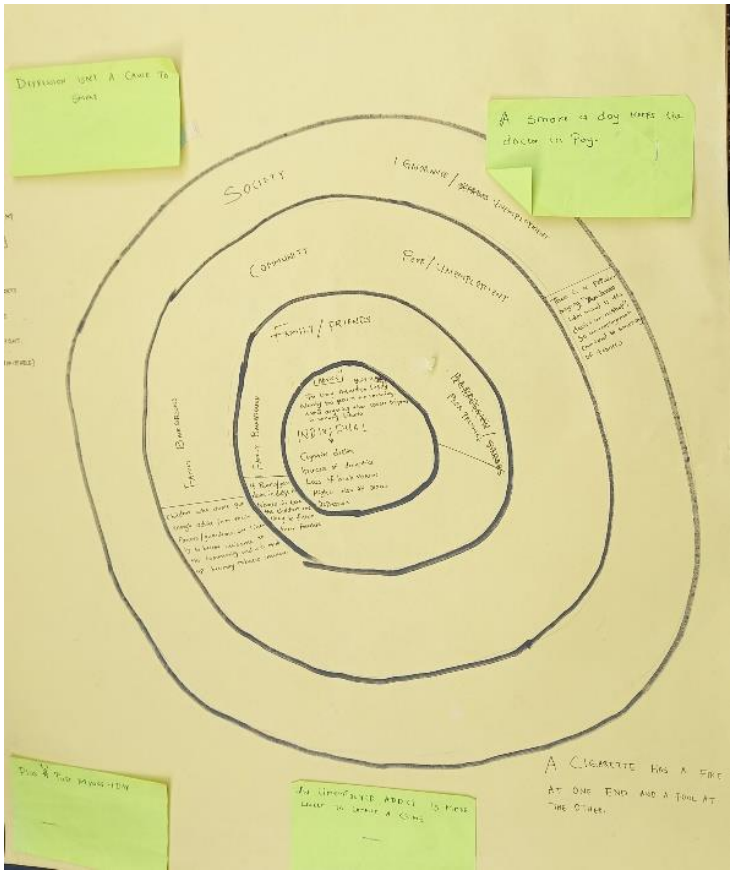


Figure 22: Idea Clouds by Creative Scholars & Team TFT

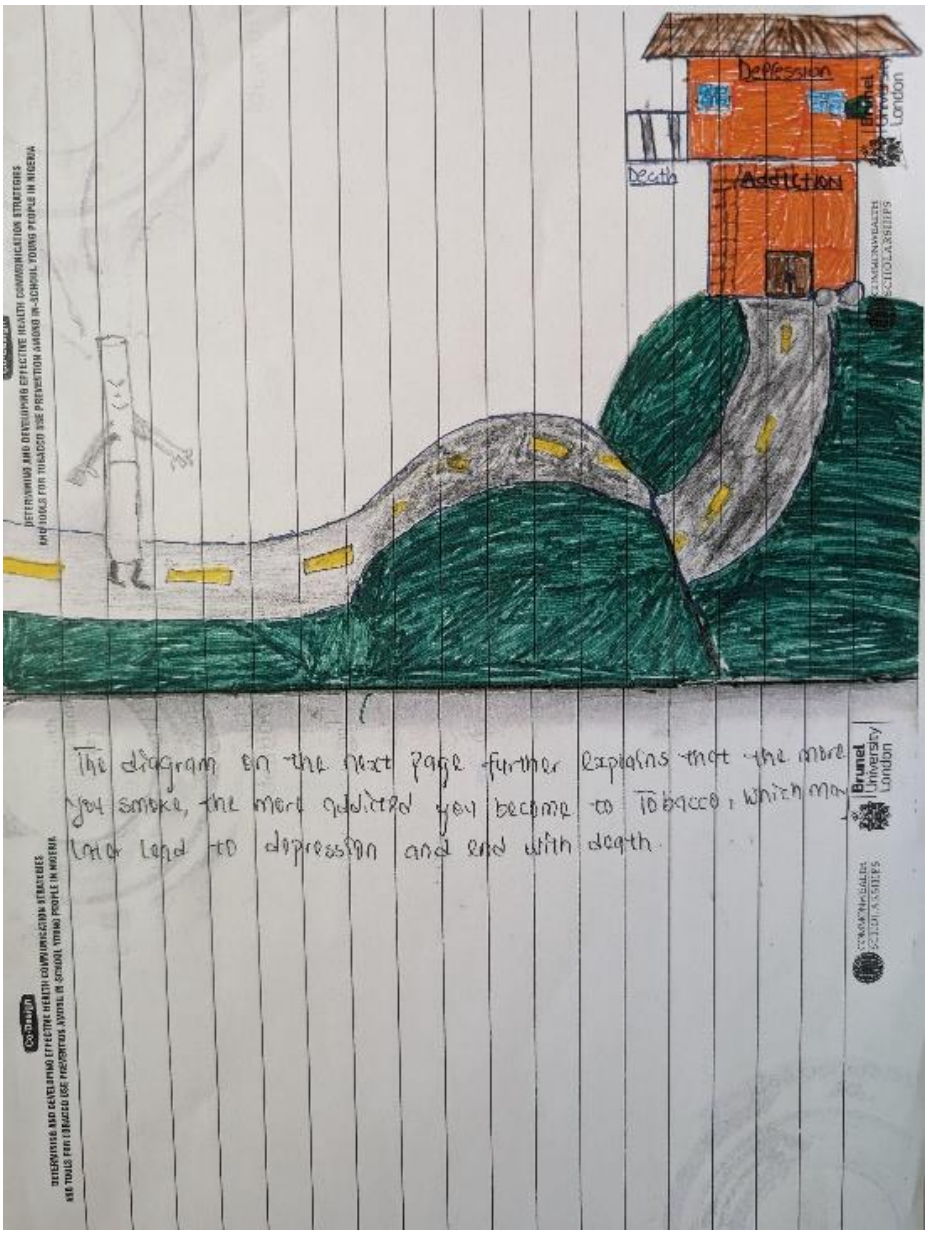


Figure 23: Team TFT Diary Drawing

While some teams found it easy to decide on a campaign theme before generating messages, others needed more support to navigate the process.

Another team that experienced minor difficulties was Progressive Team. They succeeded by creating time to meet after the idea generation workshop and decided on key messages for each level. After deciding on the messages they wanted to highlight at each level, they agreed that the best theme that fit the messages was; “Tobacco affects one person and then Everybody”. They chose the theme because they felt when someone engages in smoking, they give room for health issues, untimely death, and a possible increase in crime rate. All of which will ultimately impact the family and the wider society.

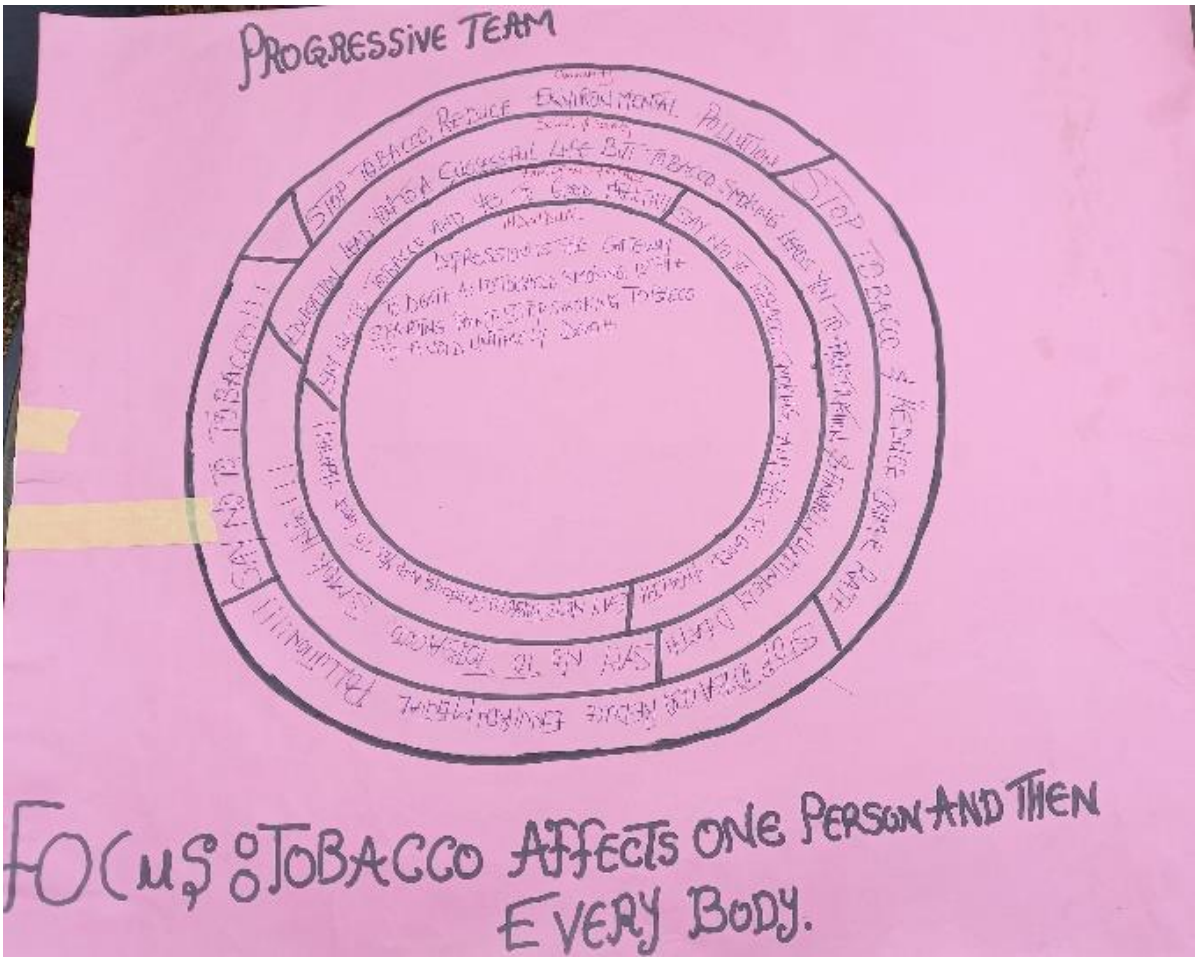


Figure 24: Idea Cloud by Progressive Team

5.4 Workshop 2, Activity 4: Providing a four-level structure for participants to categorize selected messages based on their campaign goal

In working with the participants to co-decide their campaign theme and messages; we looked at the word cloud with the root causes of smoking alongside their team's problem tree (See Figures 17 & 18); and deliberated on what they felt was important for young people.

Team Phoenix and Team YES also found the message generation process difficult to navigate. Team Phoenix found it difficult to reach an agreement on what their campaign theme and selected messages should be. They could not decipher the connection between the messages they had generated and were at a loss on what the campaign theme should be. They could not also agree on how best to approach getting a campaign theme from the messages that each team member had come up with. To support them, I worked with them to decide on the root causes and messages that they wanted to focus on. This required us to navigate why the root causes were important to them as a group and find a campaign theme that encompassed the causes but was also "catchy". After referring back to their problem tree and going through the messages from members, I showed them how their messages collectively pointed to mental health and relationships. This demonstration helped to facilitate the decision-making process for them, and they were finally able to work it out on their own. They eventually arrived at an agreed campaign theme after pulling together their generated messages and finding a category that they fit into. Their diary entry highlights in their own words the support and process they used to eventually arrive at their desired output.

*"Messages that were to be passed to the individual, friends and family, school and community and society constitutes the four level messages (4LM). We were asked to write down messages personally on the four topics before making the 4LM". After collection of individual messages, we had a problem with drawing the messages, so we sought help from our research director Miss Charity and she put us through with the problem firstly. Secondly, we had a problem with coming up with the "THEME" of the message which actually almost broke the team into pieces. And once again, Miss Charity assisted us and we finally came together to brain storm before finally coming up with the theme; which was "Tobacco Smoking, a threat to our environment, health and Morals". (*Team Phoenix aka Kakarot Diary Entry 2)

Team Y.E.S. also experienced similar difficulties in navigating message generation and formulating a campaign theme. While their struggle was like that of Team Phoenix, the struggles experienced by Team Y.E.S led to deeper team bonding and the generation of a new outlook. The word “idea cloud” was first introduced by Team Y.E.S as they felt it better represented the task they were doing than four-level messages. The members of the team each had a different idea on how the task should be handled. I was able to convince them to try to decide on a campaign theme before proceeding to generate messages that aligned with their preferred theme. Their diary entry gives a snapshot of how intense the arguments were.

CLOUD

THEME CREATION (IDEA ~~CREATION~~)

There was quite a misunderstanding as most people did not get the actual meaning or idea of what they were supposed to do. As being dirty is accustomed to pigs, argument is accustomed to Team Y.E.S. There was an argument as everyone thought they were on the right track. Although, no one’s idea was ever disputed, there was still a huge argument.

*After the argument, we were able to see what were told to do and started off immediately. Everyone got writing their messages on their stick notes and then it was collated all together and that was how we came up with the IDEA CLOUD. (*Team YES, Diary Entry 2)

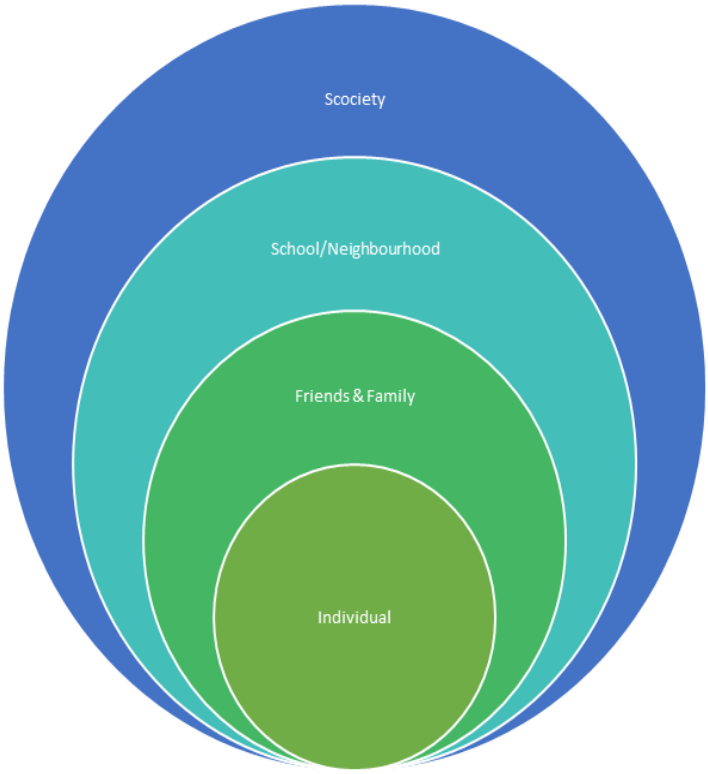
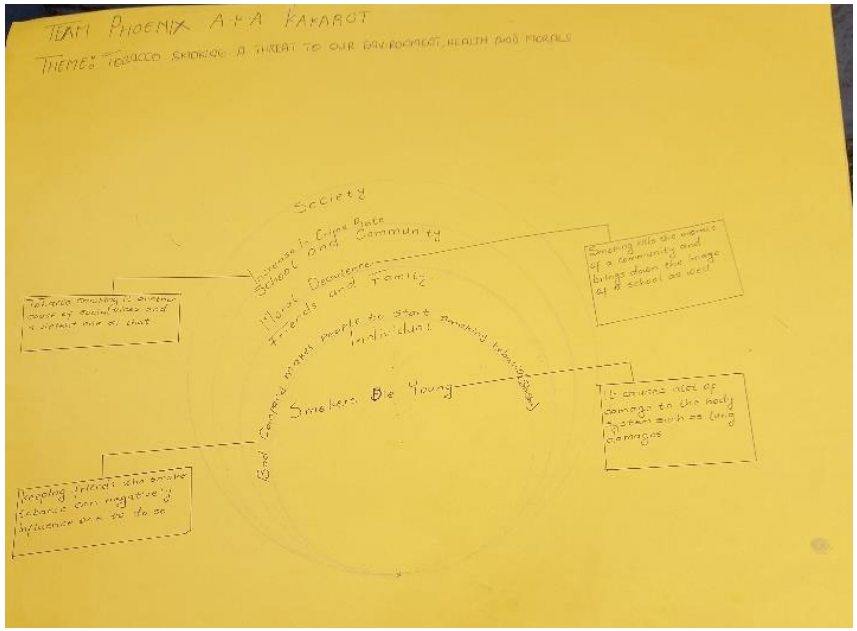


Figure 25: Structured Sample of Idea Cloud

Drawn Sample (Team Phoenix) **(Team Y.E.S)**



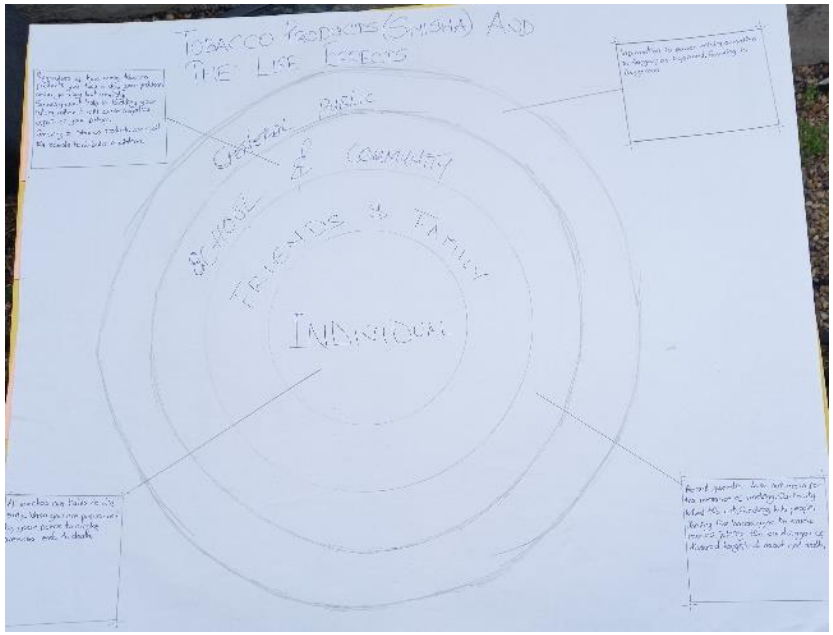


Figure 26: Drawn Sample of Idea Cloud by Team Phoenix & Team Y.E.S

This co-design phase involved a workshop with four activities, including: addressing misconceptions, playing videos to facilitate idea generation, generating messages using the structure of the CDC socio-ecological model, and categorizing messages based on team's campaign goal. Participants from the seven teams were able to co-decide on a campaign focus and generate anti-tobacco messages.

In the next chapter, the messages generated will be analyzed based on the level within which participants chose to categorize them.

5.5 Reflections

The idea generation phase was more demanding than the discovery phase for the participants and the facilitator. This phase was a reminder of why co-design can be fuzzy at some point (Sanders and Stappers, 2008) but can become less fuzzy when working with participants who are the end users and experts of their own experience. Participants demonstrated their commitment to working together despite disagreements and eventually generated anti-tobacco messages that they felt were relevant to young people in their context. While the idea generation pattern of gathering different ideas and then streamlining them was not followed to the letter; the adapted approach still achieved the same result as participants were able to decide what messages they wanted to place in their idea clouds and those they wanted to leave out based on their shared campaign theme.

The next phase (ideation) dives into utilizing the campaign theme and messages to design a health communication plan for young people as well as prototypes for posters and a video.

CHAPTER SIX

RESULTS

IDEATION: FROM IDEA CLOUDS TO OUTPUTS

Overview

This chapter details the process of analysis of the messages from the idea generation phase as a whole to inform health campaigns focused on young people. The process of analysis is reported by incorporating participants' co-design posters to buttress the messages they choose. In this chapter, I also highlight activities in the third phase of the co-design process (ideation and prototyping) to validate key campaign messages by participants using road maps. This chapter highlights the key messages from the road maps as well as the preferred channels of communication for the messages.

6.0 Introduction

The idea cloud constructed by participants provided a broad range of anti-tobacco messages constructed using the template of the socio-ecological model. The messages reflected the participants' perception of smoking and its associated effects at four levels of interaction (Individual, friends & Family, Community and Society).

This chapter will focus on coding and categorizing the messages from the four levels of the idea clouds to elicit cumulative key messages as constructed by the seven participating teams. The key messages would also be presented alongside the outputs co-designed with the participants. These outputs include; twelve posters (See Appendix 23), a short video (See Appendix 19), and a song by Team Y.E.S (See Appendix 20)

This chapter will also present road maps designed by the seven teams. The road maps are outputs designed to provide direction when making a health communication plan that will target young people. The road maps highlight participants' views on the appropriate time(s) certain channels of communication should be engaged to reach young people. Key message categories of the road maps from the seven teams will also be presented at this chapter's end. This would be a combination of key messages from road maps using a process of inductive coding and categorization.

6.1 Key Messages from the Idea Cloud

The messages generated by participants were not easily translatable from the idea cloud to a poster or a video. While some of the messages or the idea behind the message seemed good enough to translate to posters, the majority were presented more as statements rather than as direct messages for campaigns. Also, as participants moved from the individual level to societal level, written statements increased. Participants were able to create more translatable messages at the individual level than at other levels. Most of the messages generated would need further refinement by social marketing professionals.

The key messages from the idea cloud displayed their perception of tobacco smoking as a habit with far-reaching consequences. The process of coding and categorizing the messages from the idea cloud to arrive at four key messages is shown below.

Table 8: Key Message from the Idea Clouds of the Seven Groups

Message	Code	Category	Key Message
Individual Level	**Descriptive**		
Depression is the gateway to death and tobacco smoking is the starting point. Stop smoking tobacco to avoid untimely death	Depression Untimely death	Mental Health Death/Unfulfilled life	Smoking as a gateway: bodily & mental consequence of smoking
Depression isn't a cause to smoke	Depression	Mental Health	
Tobacco leads to unhealthy lifestyle. Beware!	Untimely death	Death	
Watch out, smokers are more likely to die young	Untimely death	Death	
Smoking can cause mental health disability	Disability	Mental Health	
Smokers die young (damage to body system like lung)	Statement – Needs Refinement Untimely death	Disease & Death	
All smokers are liable to die early. When you are pressured by your peers to smoke, pressure leads to death	Pressure to untimely death	Death	
Smoking leads to insecurity problems, decrease your IQ, health issues	Statement – Needs Refinement Health and Security Consequences	Consequences of smoking	
Plus + 1 Puff Minus – 1 Day	Untimely death	Death	
A smoke a day keeps the doctor in pay	Health and finance	Consequences of smoking	

Message	**Code**	**Category**	**Key Message**
Family & Friends Level	**Descriptive**		
Say no to tobacco smoking and yes to good health!!!	Say no to smoking	Peer Influence	Dealing with deadly influence & challenges
If parents and guardians indulge in tobacco in-take the children are likely to follow their foot steps	Statement – Needs Refinement Tobacco intake by adults	Parental Influence	
Self-interaction (one on one) on the effect and damages caused by smoking	Statement – Needs Refinement Advice on health effects	Advice from wiser persons	
Congratulate them on any achievement they make	Statement – Needs Refinement Family approval	Parental Influence	
Young people whose parents had ever smoked are more likely to become smokers unless they have been enlightened	Statement – Needs Refinement Education countering bad parental influence	Parental Influence	
Smokers nowadays are being pushed to smoking by their peers which is deadly so please beware	Statement – Needs Refinement Peer pressure and deadly friends	Peer Influence	
Bad company makes people to start smoking. Keeping friends who smoke can negatively influence one to do so	Statement – Needs Refinement Bad Company	Peer influence	
Absent guardian does not mean for the presence of smoking. Curiosity kills the cat. Smoking kills people. Joining the bandwagon to smoke means joining the bandwagon of diseased lungs, bad heart and death	Peer Influence & Death	Deadly Influence	
Bad company is a factor that influence smoking. Emotional problems from friends and family shouldn't make you a smoker	Peer Influence – Bad Company Dealing with Challenges	Peer Influence & dealing with challenges	

Message	Code	Category	Key Message
Community	**Descriptive**		
Education leads you to a successful life but tobacco smoking leads you to frustration and finally death. Say no to tobacco smoking!!!	Education or Death Peer Influence	Success over death	Planning for a successful/empowered future
Children who don't get enough advice from parents/guardians, are likely to become nuisance to the community and will end up becoming tobacco smokers. An unemployed addict is more likely to commit a crime	Statement – Needs Refinement Poor parental influence/guidance leads to social nuisance Statement – Needs Refinement Addiction and unemployment as a dangerous combination	Guiding against addiction and crime	
The media showing tracks of the danger it has no our health and publishing it in newspapers – Choose life not death, tobacco kills Be warned!!!	Statement – Needs Refinement Choose life Not Death		
Following bad friends, pressuring them to join and later they become an addict which is risky to their health	Statement – Needs Refinement Bad Friends (Peer pressure)	Addictive Influence	
Tobacco use affects our performance in school which makes us to likely have bad grades. So stop smoking now	Statement – Needs Refinement School performance and grades		
Moral Decadence – Smoking kills the morals of a community and brings down the image of a school as well	Statement – Needs Refinement Reputation/Image is important	Disempowering communities	
Regardless of how many tobacco products you take a day, your problems never go away but multiply. Smoking won't help in building your future, rather it will cause negative effects on your future. Smoking of tobacco spoil the school's hard-built reputation	Statement – Needs Refinement Dealing with challenges Building a good Future, Maintaining Reputation	Disempowering people and communities	
Smoking in school or community can make your friends stay away from you because they are passive smokers. To maintain our senses, we must abstain from using tobacco	Statement – Needs Refinement Peer Influence – Staying away from a smoker	Peer Influence	

Message	Code	Category	Key Message
Society	**Descriptive**		
Stop tobacco, Reduce Environmental pollution Stop tobacco and reduce crime rate Stop tobacco, reduce environmental pollution!!! Say no to tobacco!!!	Reduce Pollution Reduce Crime rate Say no to bad Peer influence	Stopping tobacco use to Reduce consequences	Stopping the spread to Reduce consequences
There is a popular saying, 'An idle mind is the devil's workshop' so unemployment can lead to smoking of tobacco	Statement – Needs Refinement Unemployment/Idleness is destructive		
Ban use/import of tobacco into the state. Portray the harmful effects of tobacco in media	Statement – Needs Refinement Ban/Law Enforcement		
Ban tobacco production	Statement – Needs Refinement Ban/Law Enforcement		
Smoking pollutes the soil, beaches, water ways and society at large. Stop the spread	Stopping the spread: Danger of pollution		
Increase in crime rate –tobacco smoking is another cause of social vices and a violent one at that	Statement – Needs Refinement Crime rate		
Information is power, misinformation is danger; be informed. Smoking is dangerous	Correct Information is vital		
Smoking in the society can damage the kind of relationship you have with people. A bad environment can be a gateway to smoking	Statement – Needs Refinement Reputation is important Environmental Influence		

The key messages from the teams' idea clouds were:

1. Individual: Smoking as a gateway: bodily & mental consequence of smoking
2. Friends & Family: Dealing with deadly influence & challenges
3. Community: Planning for a successful/empowered future
4. Society: Stopping the spread to reduce the consequences

6.1.1 Smoking as a Gateway: Bodily & Mental consequence of Smoking

The messages generated by participants at the individual level focused on preventing smoking among young people like themselves. Participants visualized smoking as a gateway or a pathway to serious consequences. These consequences were connected to death, illness, and addiction which were often associated with emotional and financial loss. The messages from Progressive team and Team TFT are good examples that highlight how the participants viewed the bodily and mental consequences of smoking.

- *Depression is the gateway to death and tobacco smoking is the starting point... (Progressive Team)*
- Depression isn't a cause to smoke…… (*Team TFT*)
- *Plus + 1 Puff Minus – 1 Day.... (Team TFT*)
- *A smoke a day keeps the doctor in pay... (Team TFT)*

Some participants had witnessed family members who became sick and/or died due to their smoking habits. They narrated these consequences as putting their families in a difficult position to cope with illness and death.

"A relative…. enmmmm He died last year because of smoking, so it was really painful because he was the first child."…. (Participant, Team EPIC)

"Yeah. Like like, I heard that girl say her uncle died because of smoking and another person also said he had a friend who died because of smoking and that is why he can never smoke because he is afraid. So I think that it's not only if the person just hear it but if the person sees is physically that ahhhh this thing really kills. Because some people will tell you it's what I heard, but you know that what you see and what you hear, what you that see you believe more than what you hear. So I'll say talk more because people say a word is enough for the wise. So for people that are not like fast learners or something like that, they need to see something."…. (Participant, Progressive Team)

For me, I also have an uncle who smokes. And he almost died. Almost. But in God's grace he is still living, and he stopped smoking. But while he was smoking we the children, we knew what he

was doing was bad. And the day my elder brother tried it, he went to bring out the cigarette and wanted to light the match to try it. So we, the younger ones. Now we have to like drag it away from him and tell him that you don't know what uncle is suffering, you want to try what he is doing. So most times when he leaves the cigarette in his pocket and he's Jean pockets and is angry with someone we will Just go there and remove it from his pocket and throw it away so he will not be able to smoke. But the day he caught us, he beat us and we had to report that see see see see. Because anytime his smoking he will just go to a private place to go and be smoking there, then he will be reasoning his life and all that. Then when we come back to know if he had smoked, he now throw it away and use sand to bury it. So we'll start digging every corner looking for it. So that's what we did that time until he had to stop when it affected him..... (Participant, Excellent Stars)

A few participants (whose parents sold tobacco products) had witnessed how individuals who were addicted to smoking would plead to purchase tobacco products and pay at a later date. Others had relatives who were addicted to using tobacco products despite receiving advice not to smoke.

"All those things like they just want to relieve the pain and everything, even if it's for a moment, they want to just release that pressure and some of them, they even get it on credit. They can just come. It's even common in our store, they are like begging. They will be like…if they don't take this thing they will just die"….. (Participant, Creative Scholars)

"Like my uncle. He is addicted to smoking, smoking tobacco like shisha. So when he like [gestures get high with hand]…..My dad normally tells him to stop but he doesn't stop and even till now he's still smoking."…. (Participant, Team Phoenix)

"I also have a relative of mine who smokes and when he takes his cigarettes…..In fact, every morning he takes it, in the evening, the afternoon, any time. And when I try talking to him, he's like very aggressive. He does not even like say things that is proper for him to say. That's just. And I think root causes are Ignorance and illiteracy." (Participant, Team EPIC)

These experiences emphasized the deadly and addictive nature of smoking from the perspective of the participants and may have hindered those who thought smoking was fun from voicing their divergent opinions.

Team TFT took their messages a step further. They went “ahead” to design their own messages as posters with the assistance of their team member who was a content creator. Their posters highlighted their views on tobacco smoking as a pathway leading from addiction to depression and eventually to death. The message from Progressive Team took a more direct route to visualize harm. Their poster featured a healthy lung and a damaged lung to visualize the effect of smoking on the body. The poster designed from the messages by Team Phoenix aka Kakarot, further highlights the need to shun tobacco use as it could be deadly even though it may be “’sweet” at first.

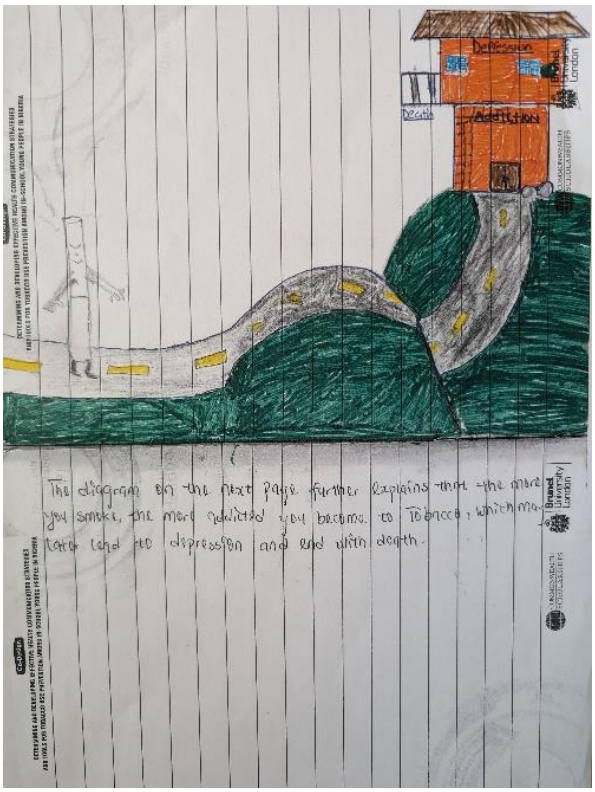


Figure 27: Designs from Team TFT

Progressive Team

Team Phoenix aka Kakarot

Figure 28: Designs for Progressive Team & Team Phoenix

The mental consequences of smoking was often intertwined with other issues and given dual roles. While depression was highlighted as an associated effect of smoking; it was also cited as a reason for engaging in smoking which could lead to being addicted. Depression was associated with family conflicts, and environmental challenges like unemployment and poverty. Participants also gave examples of being vulnerable to peer influence to smoke when parents were experiencing marital conflict or divorce or when young people were expected to fulfill high social or cultural expectations.

"Depression is the gateway to death and tobacco smoking is the starting point. Stop smoking tobacco to avoid untimely. This message is for young people and from my observation, the highest rate of depression is among young people. First of all, we get depressed at schools by peer pressure. For some that have bad home, their parents are not in good terms and condition with everything they feel depressed and secondly from what I have experienced depression is caused by many things. I can be depressed because my friend asked me to smoke and I said no. I can be depressed because my father and my parents have problems and they are not giving me attention. A normal home is supposed to have attention, all the attention a child needs. They are not giving you attention.

Then your friend now come and say start smoking. Are you say no? You feel depressed after some time, you now start having that thoughts. Your friend say that you should smoke and the smoking enhhh it will take away your problem. Why not just follow it. Maybe at that point you have not received any advice or nothing and you are just trying to think of a solution to your problem. You are now like OK, I should smoke, maybe smoking will help to at least reduce the depression or can even take away the problem. If you smoke the tobacco after some, let me say for five hours you might not think of that problem, but one way or the other, the depression must come back and if you come back you still remember the smoking and somebody that do something very often becomes an habit. Or an addiction to the person. So as for example, you are 16 years, you start smoking that 24 hour. I don't know if your lungs is still working again, so that's it."….(Participant Progressive Team)

6.1.2 Dealing with deadly influence & Challenges

The messages generated by participants at the relationship level were focused on preventing smoking among young people who were friends or relatives. While the majority of the participants agreed that there were negative consequences of smoking to physical and mental health; they also agreed that they could be influenced to try tobacco products. Participants strongly acknowledged peer and family influence in various aspects of their lives. Even though the messages generated were mostly statements, they all pointed to the significance of peer and family influence.

Participants consistently emphasized that they could be cajoled by their peers to try some tobacco products out of curiosity, ignorance, or wanting to show they 'belonged". Across the seven teams, the words; "Just try it", Just do it", It's a small thing", "'Everybody is doing it" was mentioned consistently when they referred to peer influence. The pull of not being seen as one who couldn't do what others found easy, was often a challenge for participants to deal with.

"Like maybe if you follow your friend out or something. If you see them smoking, maybe normally you know that you're not supposed to do it ooo, but they will just be pressurizing you; just try it. Try it, it's a small thing. Just try it. Finally, you try it and before you know you get addicted to it and continue and it may not really affect them the same way will affect you"….. (Participant, Team EPIC)

"Emmmm like in secondary school, I guess or university when someone does not want to smoke, obviously, but he has friends that does it and they are telling him that it's good, that he should just try it. It's not that bad, if it's bad, why have they not died since? All those type of stuff, so I think that it's the most important [peer pressure]"….. (Participant, Team Phoenix)

"I have a friend and a cousin that smokes. And she she does not like it, but she just does it because her friends are doing it. And sometimes when she's doing it in front of me, she pressurize; like smoke, Just take, just take. It's not cigar nahhh, It is shisha. Everybody takes shisha, just taste it. It is just flavour. Flavour that does not affect you. Just makes you high. So especially when my mum is not around, she comes to visit. Most of the time when she comes in with her friends or her other so called boyfriend."…. (Participant, Team YES)

Actually I see peer pressure. It is a common thing about teenagers. Like there's even this thing teenagers say that once your mate can do it, you can do it. Teenager, they want to belong, they

don't want to be left out. Even me [points to self] Member Interjects: My mate dey go make i folo them go [chorus laugh]….(Participants, Team TFT)

Participants also mentioned having to stay away or cut off "bad friends" or bad company" which was a point of contention; as some persons felt cutting off relationships that had been forged over the years was easier said than done.

On the other hand, parental influence was referenced in two ways. First, in association with the abilities of parents to either guard against or allow "bad behaviour". Second, in association with whether the parents were smokers, and as such the children would interpret it as smoking being acceptable. Participants were often more critical when discussing parents than when they were discussing about their peers. Their conversation gave the impression that they felt the adults should know and do better.

"emmmm I want talk about environmental background, sense of belonging and poor parental strategy. First of all, poor parental strategy is after what they said about parents not making time for their children, yeah, that is true. Apart from that, some parents know exactly what their children are doing, but they don't just want to believe. They want to just see them as the innocent children that they have. So they are just blinded. Some of them by the love and affection they have for them not to see the truth"…. (Participant, Team YES)

"So like my neighbour now, where I live. They are all…. The children are all grown up sha but anytime I visit them, his friends are there. If they want to eat, they must always smoke while eating…….they normally eat and smoke at the same time and then all the children, they are three. All the children, they all do the same. Someone that knows them from time said that that is how the parents are even before they got married. They eat and smoke. So I think that that's where the children got it from"……(Participant, Team Phoenix)

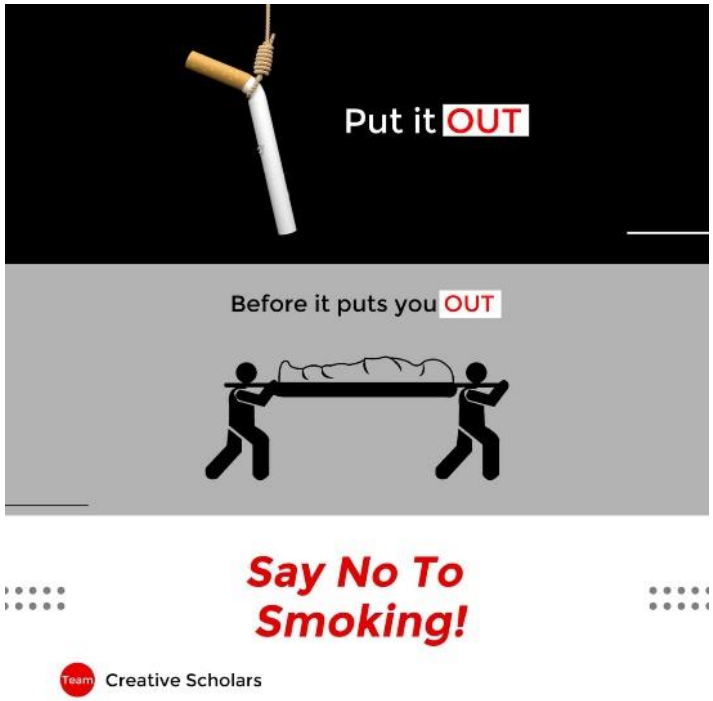
Despite the critical view about parents, some participants acknowledged that their parents' influence served as a wall of protection for them. They admitted that they refused to smoke because their parents (especially mothers) were against any form of bad behaviour.

“And also the aspect of morals being impacted into their children by their parents is also lost there because even if you are not there so far you've told your child that this is not what I like. I don't like this. I don't like that I don't accept this. I don't accept that. So far you are not there they won't do the ones that you don't accept so far you have been instill the morals in them, but when they don't have the morals from the beginning, they just do anything they want to do. They can just be easily influenced by their peers into doing what their peers are doing and so they don't have a decision of their own”…. (Participant, Team Excellent Stars)

“I've also experienced something like that before when I really came to Benin. Benin City, was one of my uncle like that that normally do comes to visit, so it was like one day [Christian], will you smoke. Like, I saw him smoking was like uncle what is that. He said it's good for the stomach that he was smoking. He said he's good for the stomach. He said come and taste it nah. Come and taste it. I say no oooo. I will not taste it ooo, my mommy will beat me. And his like no, if you if you taste, it will make your stomach calm down. Maybe you eat over feeding you will just. I am like, uncle Henry, don't you know that smoking is not good, is bad for lungs. So most of my uncles that I have actually come across their smokers. And they are like, come and taste it and am Like no, my mommy will beat me so yeah”…… (Participant, Team Excellent Stars)

Some posters that visually highlight the key message are show below. The poster by team Creative Scholars portrays the deadly consequences of smoking while the poster by team YES emphasizes the need to not follow the crowd as smoking does not resolve problems or challenges. The design from Team YES is in Nigerian Pidgin English, which is a language often spoken across Nigeria, but more prevalently spoken in the southern region.

Team Creative Scholars



Team YES

Figure 29: Designs for Team Creative Scholars and Team Y.E.S

6.1.3 Planning for a Successful/Empowered Future

The messages generated by participants at the community level were focused on preventing smoking among young people in their schools and neighbourhoods. The messages mostly referenced preventing peer/environmental influence, preventing addiction and crime, and using education as a tool to build a great future.

Participants believed preventing "bad" peer/environmental influence was key to growing up and being successful in the future. The influence exerted by people within the neighbourhood they resided in (environment), was often connected to the community level. Participants highlighted that living in an environment where people smoked openly and freely could influence young people to also take up smoking, because "people practice what they see around them".

"……And for the environmental background everybody knows what you see around you is what you want to do. So if you have somebody that smokes around you, one day you will definitely want to try it. The person will always send you, go and buy this for me. Go and get this for me. So when you go and buy it one day, you want to buy for yourself to just taste it. Know the pleasure the person gets from it"….. (Participant, Team YES)

"OK, for the parental background like the place you stay like the environment we grow up. It affects us like very, very much so if there are some things that people do there, we want to do, we will be influenced to do that thing because we grow up there and that things that we are going to see and know to influence us"……. (Participant, Team YES)

"For the environment, talking about the neighbours now in the life of a child after the first quarter with the parents, the regular in house will maybe the school or the neighbours where the child gets in contact or relate with people. Now if the child lives in a neighbourhood whereby maybe 80% of those people in that neighbourhood are smokers, the child is likely to be a smoker. Either using tobacco or any of all those ones. Because in that neighbourhood that child must surely have a friend, even though the parents say "don't mingle with them". But at one time, the child will pick a friend from that same neighbour, and if that friend per adventure, is that maybe a smoker, maybe has another friend again, that is still smoker, it can easily influence that child in his neighbourhood.

And then start to take tobacco. It's also related to that bad friend and the influence"…..(Participant, Progressive Team)

Participants also thought that smoking within the neighbourhood gave room for addiction, increased crime, and reduced the moral values of the community. This perspective stems from their views on ghetto communities reputed for hosting persons of questionable character known for engaging in cultism and committing crimes. Despite their views on the influence of "bad environments" on smoking habits, participants also admitted that it would be hard for them to go to some shops to purchase tobacco products and sit at the shop to smoke. They acknowledged that only older adults would get away with such behaviour in public. If they were to do the same, they would be cautioned or shouted at and advised not to engage in smoking.

Participants also saw education as a tool to pave the way for a bright future. This would help to reduce idleness and unemployment, prevent frustration, and ultimately limit reasons for young people to cope with problems by using tobacco products. Although participants agreed that education was vital for a bright future, they also admitted that it was not a solution to unemployment. They acknowledged that there were no jobs even after obtaining an education and the state of the country was also not helping them feel confident about the future.

"You know, there's a saying that goes like this. An idle mind is the devil's workshop. If the person has nothing doing like he's there 247 the person is very open to this intimidation, peer pressure. The person that has a Job will not have time to see the people that, will tell him that - try it, try it nahhh it's good, it's good. But if the person is idle even without anybody telling him, he will just sit down and start thinking; something will just take his mind there. After [the person will say] let me just let me just try it nahhh, maybe it will taste nice or if the person is just bored the person might just start smoking. People like that they just sit and when you say why are you smoking now? They will say wentin i go con do nahhh. They are just bored. They just want to…..they will be taking [pauses a little] drugs"…..(Participant, Team TFT)

Some posters designed using the messages generated by participants are shown below The posters show that they are conscious of the challenges they may experience while walking towards a successful future, including how environmental influences could impact them.

Team YES

Team EPIC

Figure 30: Designs for Team Y.E.S & Team E.P.I.C

6.1.4 Stopping the spread to reduce consequences

The messages generated by participants at the societal level were focused on preventing smoking among young people within their state of residence through government bans. Participants emphasized stopping tobacco use to reduce environmental pollution, and crime as unemployment or poverty could be a recipe for an increase in crime in society.

Participants thought that unemployment fostered an increase in the rate of crime and lowered the image of the state in the eyes of outsiders. Participants drew a connection between smoking and crime as they saw members of cult groups and addicted persons as the key users of tobacco products and other drugs. Participants also connected the relationship and community level to the societal level. It was difficult for them to isolate the message at the societal level without highlighting the other levels.

"So for the friends and family, if you have a family member that is smoking……If you have a family member is that is smoking first of all, I cannot be proud of my uncle if he is smoking……. I can't. I cannot tell somebody that my uncle smokes. It doesn't make sense nahhh. OK, my uncle is smoking and secondly, he's jobless. He's smoking. He needs money to buy those cigarettes, to start committing crime affecting the society. So what I'm trying to say is at the friends and family level it can affect the society and the community at large.
OK. If it starts affecting the society, stealing from other people and stuff like that he's trying to disturb the peace of the community and the fact that that, that that's what bring the increase of crime rate. Most a times, youth of nowadays some of them they just commit crime because they they're just looking for desperate money. And if you even hear the reason why they're looking for the money you will be like [rolls eyes] like seriously looking for money to buy tobacco, looking for money to buy some kind of things that doesn't even, doesn't even make sense. Like OK there's a guy in our area. He went to steal. They asked him why did he steal, he said he's looking for money to buy ''igbo" what they call weed to sniff. That's the reason why. He said that if he doesn't take it, he doesn't feel normal at allllllll. His body will be just be doing one kind one kind; So that's the reason why he steals.
There will not be a leader, kind of one person in that area that is doing that thing, there will be different different people. And in those matters, always reporting that are they stole here; they

stole there. They will now start disturbing the vigilante they should come and start creating strategies to be looking for a thief. And it's just one single thing that is just causing the problem. That tobacco. (Participant, Progressive Team)

Other outputs from this phase of the co-design process include a song and a short video. A screenshot of the video is shown in Appendix 19 while the song created by Team Y.E.S is shown in Appendix 20.

6.2. Workshop 3, Activity 1: Charting a Health Communication Road Map (Key Message and Channels of Communication)

The participants from the seven teams were asked to create road maps that highlighted how they would plan a health communication strategy for young people. This activity was meant to enable them to construct plans for preventing tobacco use based on their perspectives.

The task was also meant for them to prioritize key messages that must be addressed, when young people are the focus and identify the channels they would use to promote the message and reach young people.

This was done by using the key message at number one (stop one) with other stops following. The samples of the road map shown below were presented to the participants as a template to create their health communication road map.

Structured Samples

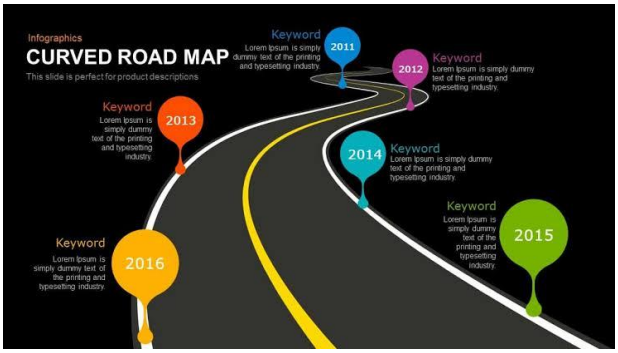


Figure 31: Structure Samples of Road Maps

Team TFT

Team YES

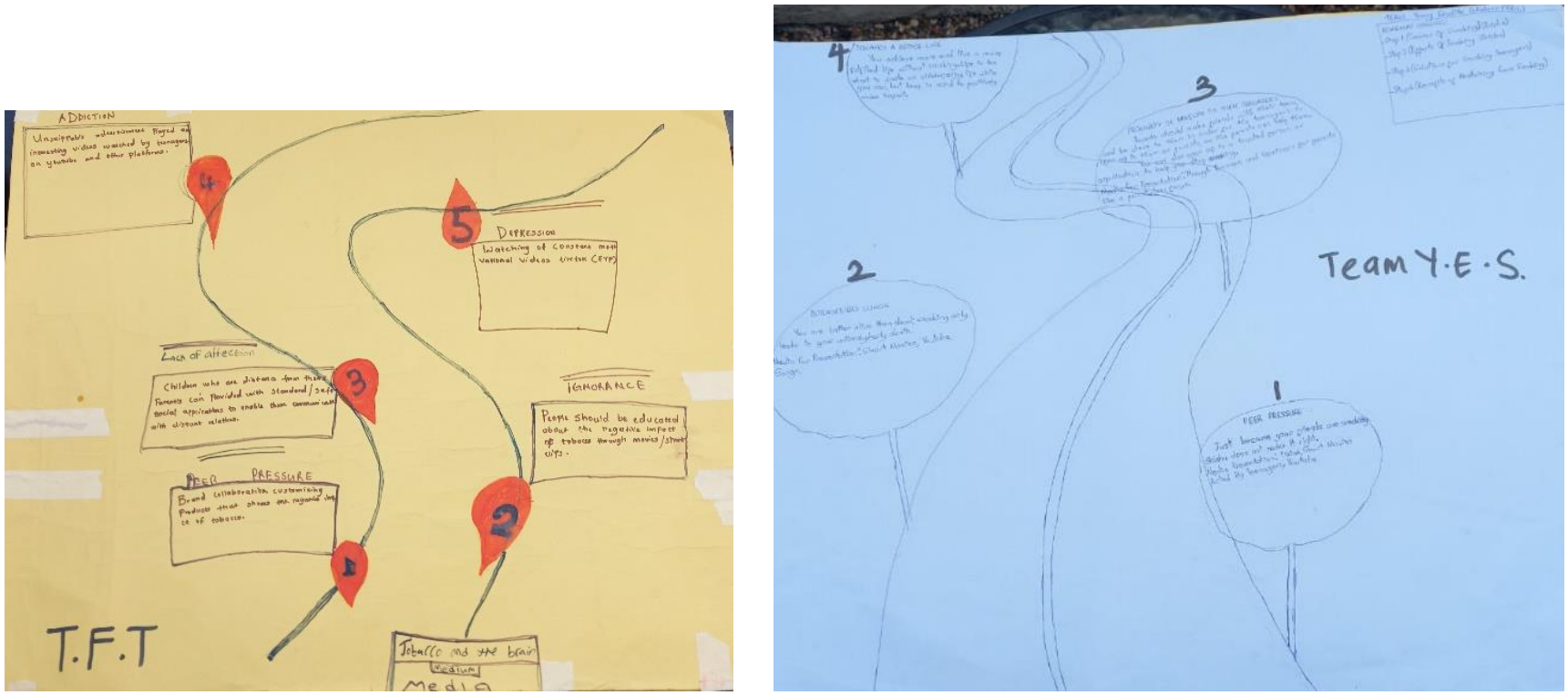
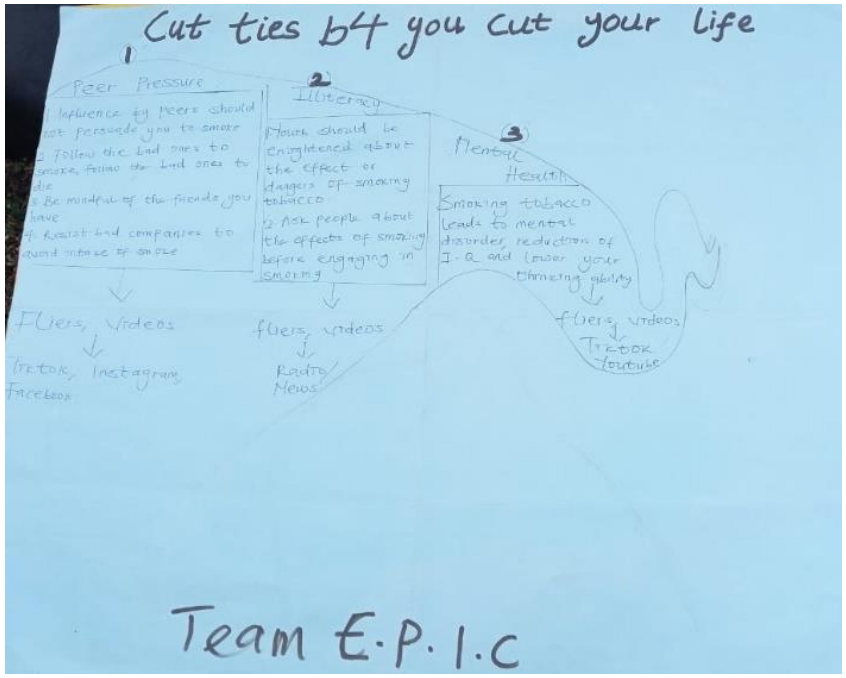


Figure 32: Drawn Road Maps by Team TFT & Team Y.E.S

Team EPIC



Team Phoenix

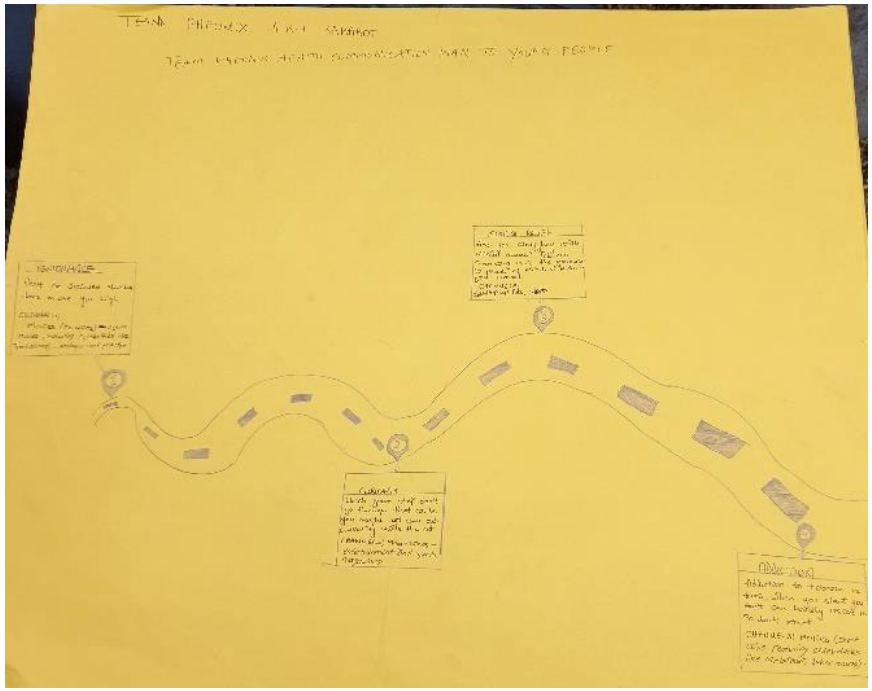


Figure 33: Drawn Road Maps by Team E.P.I.C & Team Phoenix

6.2.1 Key Message

While most teams prioritized peer pressure and mental health as their key messages, two other key message categories were also highlighted in the road maps from the seven teams. These were disease and death, and knowledge gaps (ignorance, illiteracy, and curiosity). The codes and categories for the key messages prioritized in the road maps are shown below.

Table 9: Key Message (Road Map Codes)

Team	Key Message 1	Key Message 2	Key Message 3	Key Message 4	Key Message 5
Progressive	Depression	Disease & Death			
Excellent Stars	Smoking as a criminal action				
Teenagers Fighting Tobacco (TFT)	Peer Pressure	Ignorance	Lack of Affection	Addiction	Depression
Creative Scholars	Mental problems, depression	Drug addiction	Lung cancer, heart disease, organ damage		
Phoenix aka Kakarot	Ignorance	Curiosity	Mental Relief	Addiction	
Y.E.S	Peer pressure	Diseased/Bad Lungs	Proximity of parents to teenagers		
E.P.I.C	Peer pressure	Illiteracy	Mental Health		

Table 10: Key Message (Road Map Categories)

Key Message 1	Key Message 2	Key Message 3	Key Message 4
Peer Pressure	Mental Health	Disease & Death	Knowledge gaps
Other Message			
Smoking as a criminal action			

Peer pressure and mental health were recurring categories at the individual and interpersonal (family & friends) levels of the idea clouds, and these were reiterated in the road maps. Through the road map, participants further validated that peer pressure and mental health were key areas for a tobacco control health communication plan.

Participants mostly wanted key messages that showed that smoking shisha or cigarettes due to peer pressure may eventually lead to mental health problems and ultimately addiction and or death.

Don't be deceived shisha does make you high....(Team Phoenix)
Follow the bad ones to smoke, follow the bad ones to die.....(Team EPIC)
Just because your friends are smoking shisha does not make it right.....(Team YES)

The bodily harm associated with smoking (disease & death) and knowledge gaps (ignorance, illiteracy, and curiosity) were key messages highlighted in the health communication road maps for tobacco use prevention by the participants. Ignorance, illiteracy and curiosity which often preceded tobacco smoking were linked to the harms associated with smoking. This perspective propelled the participants to favour key messages that depicted the consequences of smoking to instill fear into young people and ultimately serve as a tool to prevent smoking initiation. The participants from Team Phoenix gave clear directions on how the deadly effects of smoking should be depicted including featuring individuals who have experienced bodily harm due to smoking.

Member: Just show a person that started smoking and ….

Member: The effects…

Member: Yes, and the person dies after maybe a long time

Facilitator: Okay, you think that would be good? That would attract you?

Member: Yes, that would be perfect.

Facilitator: Thank you. So show someone who has smoking whether shisha or cigarettes and then the life after?

Member: Yes, or you can still make use of let's say people that smoke saying don't smoke. Something like that.

Member: They will just like show them warning them [Members laugh] (Team Phoenix)

6.2.2 Channels of Communication

The channel of communication strongly highlighted by participants from the seven teams were short videos portraying the key message using an Edu-entertainment approach. These videos were recommended to be aired on traditional media and social media like national television stations, TikTok, Facebook, Instagram, and WhatsApp. Participants specified that the videos on social media should be “pop-up ads” that were unskippable (not possible to skip) to ensure that the target audience watched it before they were allowed to “move on”.

Participants also highlighted that though anyone could pass the message, celebrities in the movie and music industry in Nigeria were better positioned to pass anti-tobacco messages via videos. Participants further reiterated that though anyone could pass the message, it should not be political office holders, who were envisaged to have ulterior motives, and as such the message would not be accepted. Participants were particularly keen on celebrities passing the message to young people as they believed they would listen and accept the message better. They also believed celebrities could influence young people to take the message seriously. Some Nigerian celebrities mentioned include Destiny Etiko, Zubby Michael, Naira Marley, Burna Boy, Davido and Mercy Johnson. No particular celebrity was more favoured, but the consensus was that celebrities who smoked and came forward to tell young people not to engage in smoking would be better believed as they had the money to purchase the product but chose to abstain. Music celebrities like Burna Boy and Davido were favoured by male participants while male and female participants both favoured the actress, Mercy Johson. They believed celebrities could influence

male and female fans as female celebrities may have more male fans while male celebrities could have more female fans.

Other channels of communication highlighted by participants were print media such as billboards and fliers. They recommended these be placed at strategic and conspicuous locations in their place of residence which were frequented by many people.

The message should be presented in billboards in popular areas, towns, ETC. Popular actors who are being imitated by young ones should be used to act videos or films which can pass a message to them. Flyers can also be printed and shared around to young people to pass the message. Actors or actresses, which are popularly known, such as Destiny Etiko, Zubby Michael and others, can act in a film or portray a video on social media. We have trendy people who are being followed by fans, can also help to pass the message. This video can be acted in a school setting or can be shown as talk shows on Television programmes because most young people like I, I used to watch talk shows mostly some days. Those talk shows that talk about quiz competition, life, health and stuff like that. There are many on ITV, EBS and stuff like that. So time, young people always have time mostly in the evening, so television programme that will talk about tobacco smoking should be shown during evenings from 6:00 o'clock to 7:30.....(Participant, Progressive Team)

When asked how the suggested channels of communication could be incorporated into their school setting, participants were not certain about the approach. Participants preferred using printed messages on posters and online messages on WhatsApp or their school's website. They thought that social media platforms were the best medium to reach young people but also suggested that "captivating" posters that could not easily be ignored could be strategically placed at key locations within their school premises. One dominant location cited in the private school (Team Phoenix, YES & EPIC) was the school stairway where students walked past and often socialized with each other. Other locations cited by participants include their school library, classroom, laboratory, and school gate.

In the public school, participants suggested that school plays be enacted during morning assemblies where most students could be reached and that there were areas where posters could

also be placed at the assembly ground. They also suggested that videos should be shared using individual WhatsApp status updates to promote anti-tobacco messages.

6.3 Stakeholders' Workshop

In line with our verbal agreement to facilitate audience and influence (Lundy, 2007; see chapter 3, 3.15), I invited key stakeholders including students voted by their teams (28), parents (5), schoolteachers (5), Non-governmental Organizations (NGOs) (17), healthcare professionals (5), journalists (4), film professionals (3), youth groups (2), tobacco control groups (4), and policymakers and government parastatals (7) to a stakeholders' workshop.

The stakeholders invited was done purposely as they are instrumental in decision making and funding as regards tobacco control programs in Nigeria. Co-design has been shown to be more productive when stakeholders who hold influence in the area of interest are engaged in the design process (McKercher, 2020). In the Nigerian context, non-governmental organisations have been at the forefront of propelling the government to make policy and implementation decisions in tobacco control (Udokanma et al., 2021), this was taken into consideration for invitations to the stakeholder's workshop. Out of ninety invitation letters sent out, eighty were physically present for the stakeholders' workshop while two opted not to participate due to conflicting commitments but especially due to security challenges with safely travelling by road from northern Nigeria (See Appendix 21).

At the workshop venue, participants' poster designs were featured on the walls to generate conversation and feedback from adult stakeholders. During the workshop activities, six stakeholders were paired with four students from the seven teams to work together aided by each team's road map to facilitate actionable steps. This was done to facilitate action planning, enable stakeholders build on the ideas of the young participants and gain practical insight for execution. The recommendation for group task on improving exiting ideas by Hamilton (2016 pg. 65) was adapted to facilitate this process. The key consensus was that the length of the video should be reviewed to enable it to be featured on television to facilitate wider reach. Feedback on the posters and video by the seven teams is highlighted in 7.1 and 7.2.

6.4 Reflections

The ideation and prototyping phase of the co-design process was not as straightforward as it seemed. The process of working with participants to transform their key messages into tangible materials was also more demanding than envisaged. While some teams were able to come up with messages that could be used for campaign purposes in posters, others constructed messages that had to be refined further for video or poster. The messages (needing refinement or not) represented the reality of participants, as such, I ensured they were all included in the coding process (See Table 8). This ensured that I gave audience and respected the expressions of my participants (Lundy, 2007). The posters from the process were all designed with Canva relying on the limited skills of the facilitator, which could have impacted the ideation and prototyping process.

Also, the process of producing a video would have been better facilitated with the assistance of a social marketing company with the skills necessary to visually transform the key messages into outputs. Overall, the process went well as participants were able to reflect and validate what the key messages should be through their road map.

This co-design phase involved a workshop with two key activities, including: categorizing participants' messages using the socio-ecological model and charting a communication road map with different channels. Participants were able to map messages to channels of communication that they felt were appropriate for their peers and their context. In the next phase, participants would give feedback on the co-designed posters, short video and the co-design process.

CHAPTER SEVEN

RESULT

FEEDBACK: FROM OUTPUTS TO REVISIONS

Overview

This chapter highlights the process and activities in the fourth and final phase of the co-design process (feedback). It gives details on the feedback from participants on the co-designed posters, and short video as well as the co-design process from discovery to feedback.

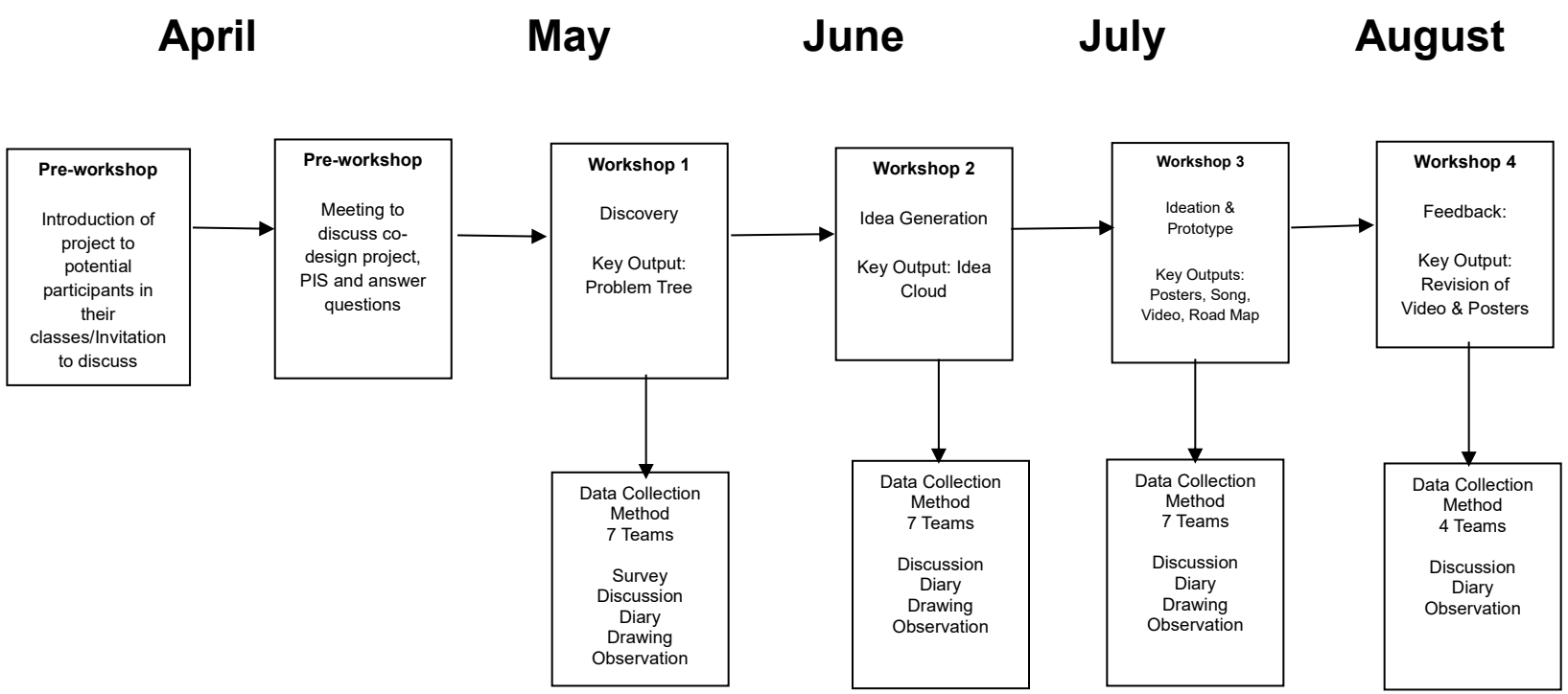


Figure 34: Flow Chart of Co-design Sessions from Discovery to Feedback

7.0 Introduction

In this chapter, the outputs co-designed with the study participants from the ideation phase were assessed by the participants during a group discussion. Participants from the seven teams assessed the twelve posters designed using Canva, while representatives from four teams watched and assessed the short video that was produced using the key messages from the idea cloud. The posters and the short video were assessed based on their acceptability by the participants.

In this chapter, representatives of the four teams who gave feedback on the short video also gave further feedback using their team diaries. They gave feedback on the co-design process, and the difficulties experienced while working as a team including new knowledge gained.

7.1 Feedback on Posters

Participants gave feedback on posters in two key areas; colours should be bright or deadly dark, eye-catching and scary, and should visually feature shisha more.

Participants consistently wanted the colours in the posters to be bright, scary, and eye-catching. Pink colours were seen as weak and not good enough to pass strong anti-tobacco messages to young people who could be misled that the poster is for something fun and exciting like a party. Male participants strongly opposed the use of colours that were highly associated with the feminine gender. These findings are in tandem with other studies that found that tobacco companies used eye-catching imagery and messages (Boyd, Boyd and Greenlee, 2003) for product promotion; including light, attractive coloured packaging, and appealing brand names with terms like “silver” or “blue” (Agaku et al., 2015) to attract young people. The discussion with team EPIC provides key insight into what participants thought about the impact of colours on young people.

Facilitator: Then the colour? You can give examples of colours that you think would be best.
Member: Pink [Members: ahhhhhhhh ahhhhh laugh]
Members Chorus: Yes, No
Members Chorus: Red, yellow, black
Members chorus: Bright colour, something bright

Facilitator: Okay, some persons want bright colours. Some persons want dark colour.
Member: When you are burning something at home, it's black
Member: This colour is okay
Member: No, to me we should stick with this.
Members Chorus: Yes, stick to this colour
Facilitator: OK, this colour is okay? But she is sticking to her pink. And everybody is classic [smiles]
Member: She is thinking in her own way but we are thinking generally. People on the street now, maybe a guy would see this thing in pink [members laugh] he might not even look at it.
Facilitator: But a girl will look at it
Members Chorus: Noooo, Yesssss
Members: Not us, may be all those people that like pink t
hings
Member: 60% of girls will look at it.
Members: 50%
Member: All the girls
Member: There are other colours. Yeah, black, black, black, black.
Member: Those devil black [members laugh]
Member: That is veryyyyy dark
Facilitator: Let me get is. Is it like you want the black to be like scary?
Members Chorus: Yeahhhh
Member: So that when they are seeing it, they will know that something dangerous will happen to them after smoking. But if you use something like pink, it will look nice and not scary
Member: And Barbie likes pink, soooooooo [Members laugh] (Team EPIC)

Participants also wanted the posters to visually focus on shisha as most young people thought shisha was sweet, flavoured, and not particularly harmful. They thought most young people were already addicted to smoking shisha but were unaware that they needed help. Participants recommended that posters show that shisha is addictive as some young people not only enjoyed smoking it but also fancied the cloud of smoke expelled as it made them feel important (cool and big). Team TFT was among the first teams to emphasize that the focus should be on shisha.

Facilitator: Your future is bright, don't shisha it away.
Members: Don't smoke it away
Facilitator: You prefer don't smoke it away?
Members: Yes
Member: We should use it, because they will say shisha doesn't affect
Member: Yes, they say shisha doesn't affect. I have many. They keep taking it.
Member: I have friends that are taking shisha.
Member: We should focus on shisha more (Team TFT)

7.2 Feedback on Short Video

Participants gave feedback on the short video in three key areas: focusing on peer pressure, adapting it for TikTok, and shortening the length and using animation. Participants thought that the short video should focus more on peer pressure and how it inspires young people to engage in smoking. They thought that this was the most important aspect and should be featured more strongly. Although participants agreed that other factors like family issues and environmental influence were important; they wanted the short videos to focus on different factors individually in different video episodes. They thought this would facilitate tobacco use prevention and cessation as different young people would prefer different episodes which would be key in reaching a wider audience. While the idea of featuring different video episodes on the different factors that caused smoking among young people was widely accepted, the consensus was that peer pressure was the most important.

Participants also thought that the best platform to feature the short video online was TikTok. They thought that TikTok was the most used platform by young people and should be leveraged to reach them but that the video should be short to ensure the message is passed quickly. Participants thought the videos should also be used to gain feedback for new videos. They thought that as young people watched the videos, they would leave comments or questions which should be used as a concept for new videos; which would ensure that young people kept coming back to learn. They depicted the process of influencing young people as a continuous one that should address misconceptions and challenge accepted norms.

Participants were unsure whether the short video should be a short drama or an animation (See Appendix 22). This was because some participants (mostly females) thought that using animation

could seem childish for teenagers. On the other hand, some participants (mostly males) thought that using animation rather than drama would catch the attention of teenagers more as the message would be presented in an aesthetically pleasing way with the use of high-quality animatics. The male participants tried to sway the female participants on why animation was the best way to go by letting them know that although they preferred watching drama; it was not widely accepted, and it would be better to reach young people using animation videos and songs. Some female participants eventually agreed that animation was good while a few retained their initial stand on drama, but they all agreed that using songs as a medium to pass the message was great.

Facilitator: Are we sticking with this concept or should we be going for something else? She gave a suggestion for a different concept that we focus on peer pressure and how it really pushes young people to engage in smoking. She said this one [the video] focused more on the family issues aspect more than the peer pressure aspect. So should we be changing the concept or sticking with this one for the anime version.
Representative: I think its okayyyyy [says it with some doubts]
Representative: We can do things like a series or parts. Let's say in this particular series, the family series, then the friendship can be another series. So I will say we do things in series.
Facilitator: Okayyy
Representative: Keep them [young people] coming back for more. So even if you don't quit when you see the first one, maybe the next one will touch you. [Participants laugh]
Facilitator: Okay. This concept, is it okay, does it really tell the story that you people were trying to say during this process.
Representative: It does but for me it's somehow….. and I don't really watch drama that much. But if you say something like songs on TikTok and people can use the sounds. There are things people are looking for on TikTok; like [Representative interjects: Animations]. Yes, animations are trending now. There are some animations that are very simple that you can make it with your phone.
Facilitator: So animation and comics. OK, so animation is coming back because she made mention of comics. So these are the considerations?
Representative: Yeah, animation and comics (Representatives: Team TFT, Creative Scholars, Excellent Stars, & Phoenix)

7.3 Feedback on Co-design Process & New Knowledge Gained

Participants gave mixed feedback about their experiences during the co-design process and the workshops. Participants enjoyed the co-design workshops and gained new knowledge but also had to build the capacity to work together as a team despite the difficulties they faced.

They thought the co-design workshops were fun, creative, and provided an avenue for them to learn new things. They also thought the co-design process enabled them to share their ideas and opinions while also learning in the process which made their participation worthwhile.

So far, so good, each workshop has been fun, creative and a lot more to learn. I personally have never been in a meeting where I have to do a mind map and so I learnt how to construct a mind map. I learnt that tobacco is not the same as cocaine though the effects are quiet similar. Each day at the workshop, we respect each other, no one's idea was ever wrong and everyone mattered. Personally, I will miss the workshop, discussion and everyone.... (Team Excellent Stars)

There was a total decline in the ignorance of the effects of smoking. The knowledge gained was exceptionally unique as we didn't get to learn only vocally but participated in projects and tasks that taught us greatly. It was both a thrilling and educative experience. It was indeed a superb program on the effect of smoking tobacco, I ensured I participated in all the workshops. I really gained a lot from this program. It was really educative.... (Team YES)

Before this workshop, we would say that we were ignorant of somethings which many included tobacco. During this process, we all learnt a lot, but here are some.
Firstly, a member testified of not knowing that shisha is a tobacco product and does get people high.
Secondly, we also realized that there is a day set aside to stop and educate on the dangers of tobacco smoking which is on 31st of May every year.
Also, we learnt that tobacco smoking has a 0.999% chance of being hereditary which on a normal circumstance is not known by many.
Last but not the least, above all we learnt to put differences aside and work as a team because united we stand, divided we fall.... (Team Phoenix aka Kakarot)

Participants gave feedback on the difficulties they experienced while trying to work together as a team. Across the teams, they experienced challenges working with classmates they usually did not talk to, which made communication difficult. This also unintendedly put more responsibility on the Chief Executive Secretaries (CES) of the teams who felt it was their duty to ensure things went smoothly within the team. Some team members also had to cope with competing priorities. This made them unable to give dedicated time to their team such as leaving school immediately after the closing bell rang to assist in their parent's business or taking younger siblings home. Others were torn between dedicating time to the co-design activities of their teams or engaging in other activities that they usually enjoyed doing like playing football.

Gathering our team members together for our projects wasn't easy. At the beginning of our meeting as a team, our team members were serious but changed slowly and suddenly. The selection of team members from our team for a conference we were invited for was difficult as a result of their unseriousness..... (Team TFT)

Our challenges came up when we had to meet to discuss things outside the workshop. Majority of the boys had football match to play, others had to go to work, for those in arts class. Also, we had a biology project to deliver and majority got busy with it and so I was left with just three persons and so working to put down ideas became difficult because we wanted what everyone would approve of but we got none and so working together became a burden to the secretary. Even though she tried getting everyone together, it was difficult. Also we had to force some to come for meetings and they came up with excuse like club, scripture union and more of football..... (Team Excellent Stars)

Firstly, we really had a hard time communicating together as a team. We were able to gather the team together but found it difficult to communicate with each other, because most of us outside the meeting never talked to each other. We just see each other sometimes even pass each other on the way. But with due time, we finally came to realize that if we continue like that, we won't be able to rub minds together in putting our ideas and information and so we overcame that.

Secondly, when it was time for our problem tree we argued a lot, because we wanted to make our drawing the best and put our best into the drawing but due to argument on who to draw the problem tree really brought to us a great challenge, but at the end, we had to vote and at the end we were able to pick who to draw.

And lastly, the most annoying challenge we faced was calling of group members to come to meetings. This one really stressed me as a group secretary because it was my duty to ensure that everyone attended meetings. It really stressed me but with due time, I made a decision not to force anyone, and so I did the meeting with the few that came. So in all of this, it was a really difficult challenge..... (Team Creative Scholars)

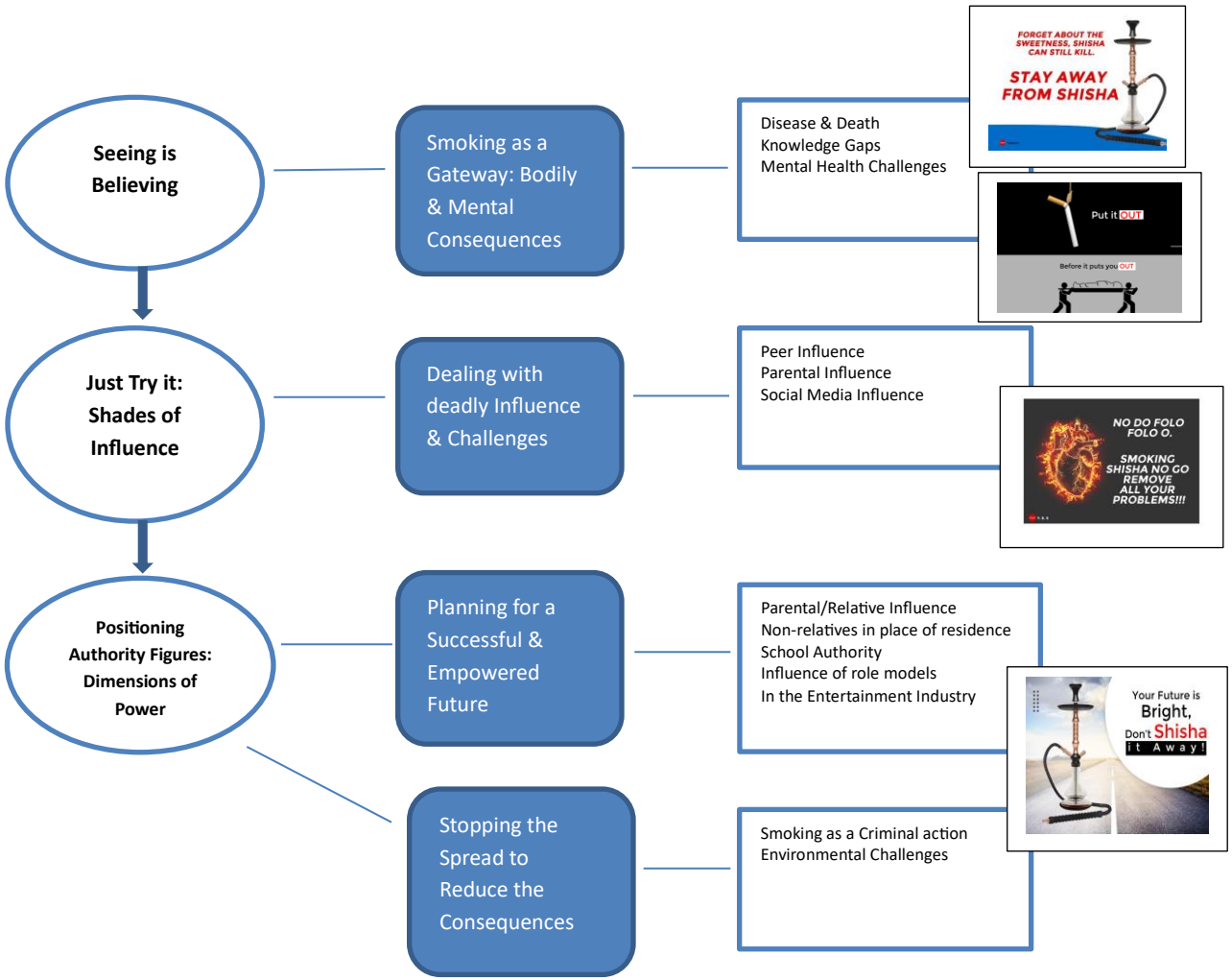
7.4 Reflections

The feedback session enabled the participants and I to discuss and reflect not only on the co-design outputs but also on the co-design process. The co-design process was empowering for the participants and I as it was a new experience for us. It was empowering for participants as those with or without lived experience of smoking were equally engaged in the co-design process (See Table 1) preserving anonymity to facilitate participation. The process was also empowering as the principles of the process (shared ideas, respect, and trust) enabled us to forge a path that everyone was comfortable with. The process also enabled us to do something that we could confidently say was done by young people for young people.

The co-design outputs were a representation of our thoughts and our hard work, which created a sense of fulfillment and accomplishment. This sense of fulfillment and accomplishment was expressed as participants took pride in their team names being shown on their draw materials at the stakeholder's workshop (See 6.3). While the process was challenging and sometimes fuzzy (Standers and Stappers, 2008) the culminating materials helped to bring a level of tangibility and end point to the process which made participants feel accomplished.

This co-design phase involved group discussions where participants gave feedback on the posters, short video and the co-design process. Participants were able to reflect on successes and challenges and acknowledge they had done well overall.

Figure 35: Thematic Map of Key Result Themes



7.5 Key Result Themes

7.5.1 Seeing is Believing

The results reflect that young people in the study believe that using the consequences of smoking to promote fear would better facilitate anti-tobacco messages. The idea behind this was that young people would better understand and believe the consequences that they could see or visualize. The “seen” consequences would create a more believable picture that emphasizes that smoking has both serious and varied consequences that are far-reaching.

The health consequences emphasized were: mental health challenges like depression, addiction, diseases like cancer, and death. These consequences were highlighted based on the experiences of participants who had friends, or relatives who had been faced with health challenges due to their smoking habits. The consequences were also highlighted based on the experiences of participants who had family members who were involved in selling tobacco products (to addicted customers) or who had witnessed members of the community they reside in smoking daily as they had become addicted. Participants also talked about young people using tobacco smoking as a tool to deal with challenging situations temporarily. These situations (such as family conflicts) were usually left unresolved, as such a cycle of smoking for temporary relief led to addiction and depression. Other consequences highlighted by participants were due to the aforementioned health consequences. For instance, participants emphasized addiction leading to financial difficulty and crime when an addicted person spent their income on tobacco products or even had to borrow to purchase them.

Participants thought that these experiences when communicated visually, would enable young people to see and believe the consequences of smoking. This perspective was further emphasized in the choice of colours for the posters. Participants thought that using dark and scary colours would better portray fear than using colours (Barbie colours) that could portray fun and partying; hence the consequence of smoking should be seen to be believed.

“Yeah. Like like, I heard that girl say her uncle died because of smoking and another person also said he had a friend who died because of smoking and that is why he can never smoke because he is afraid. So I think that it’s not only if the person just hear it but if the person sees is physically that ahhhh this thing really kills. Because some people will tell you it’s what I heard, but you know that what you see and what you hear, what you that see you believe more than what you hear.

So I'll say talk more because people say a word is enough for the wise. So for people that are not like fast learners or something like that, they need to see something"…. (Participant, Progressive Team)

7.5.2 Just Try it: Shades of Influence

Influence was cited by participants as a key factor that promotes smoking among young people. Influence was usually described as an act that sprang from peers or relatives, and curiosity or ignorance.

Participants talked about influence as a subtle process that started from "Just try it" and graduated to constant smoking (addiction). For instance, participants talked about being encouraged to try smoking by their friends, which usually began with the words "Just try it", "Just do it", "It's a small thing" or "'everybody is doing it". The encouragement from friends to "just try it" was described by participants to be propelled by either curiosity or ignorance. Friends were often categorized as either good or bad, with good friends being those who influenced them to be better persons and bad friends being those who influenced them to engage in deviant behaviours like smoking. While male participants were often the ones who referred to peer influence as a key factor for smoking; female participants also spoke about being told to try smoking shisha as it was "just" flavoured tobacco and was less harmful than cigarettes.

Similarly, participants ascribed the influence of relatives as either positive or negative. The positive influence was usually ascribed to mothers who were seen as disciplinarians who would not condone deviant behaviours. On the other hand, the negative influence was mostly ascribed to fathers, uncles, cousins and brothers who were mentioned as individuals who smoked or sent young people on errands to purchase tobacco products. For instance, participants mentioned being encouraged to try smoking by cousins or uncles who thought it was not harmful or thought it was good for food digestion. They also mentioned being sent on errands to purchase tobacco products by fathers or uncles. While negative influence was usually ascribed to male relatives, they were also the reason why some participants witnessed the serious health consequences of smoking and believed smoking to be dangerous, thereby serving as a deterrent.

“I have a friend and a cousin that smokes. And she she does not like it, but she just does it because her friends are doing it. And sometimes when she's doing it in front of me, she pressurize; like smoke, Just take, just take. It's not cigar nahhh, It is shisha. Everybody takes shisha, just taste it. It is just flavour. Flavour that does not affect you. Just makes you high. So especially when my mum is not around, she comes to visit. Most of the time when she comes in with her friends or her other so called boyfriend.”…. (Participant, Team YES)

7.5.3 Positioning Authority Figures: Dimensions of Power

Participants talked about different people with different levels of authority in their lives. These individuals were positioned as authority figures who had the power to influence their smoking behaviour.

Relatives were ascribed the power to influence smoking behaviour either positively or negatively. Parents (especially mothers) who were more present in the lives of their children and provided hands-on guidance and support were described as positive authority figures who enabled them to resist encouragement to smoke from peers or other relatives. Participants spoke about how having parents who paid keen attention to the lives of their children (instead of working constantly to make money) would enable young people not to engage in smoking as the parents would be available to provide guidance and support.

Participants also positioned members of their community as authority figures. The school authority and adult members of their community (place of residence) were positioned as figures of authority who had the power to influence smoking behaviour through direct and indirect communication. The school authority could use certain spaces within the school environment (gate, stairway, and classroom) to display posters about the consequences of smoking as well as host health talks and school club activities. On the other hand, adult members of their community could influence young people by ensuring they did not purchase tobacco products for personal consumption by giving reprimands, or advice.

Other figures of authority highlighted by participants were celebrities in the music and movie industry and the government. Celebrities were positioned as authority figures who had the power to sway young people from engaging in smoking using their popularity; while governments were positioned as authority figures who had the power to ban the sale and use of tobacco products and prosecute individuals who broke the law.

While participants explicitly acknowledged the different levels of authority highlighted, they implicitly acknowledged the power of moral standards in their communities. Participants acknowledged that young people engaging in smoking would give their family a “bad name” while a community known for being a hotspot for smoking would have a high crime rate and also have a bad name (known for something negative).

“I've also experienced something like that before when I really came to Benin. Benin City, was one of my uncle like that that normally do comes to visit, so it was like one day [Christian], will you smoke. Like, I saw him smoking was like uncle what is that. He said it's good for the stomach that he was smoking. He said he's good for the stomach. He said come and taste it nah. Come and taste it. I say no oooo. I will not taste it ooo, my mommy will beat me. And his like no, if you if you taste, it will make your stomach calm down. Maybe you eat over feeding you will just. I am like, uncle Henry, don't you know that smoking is not good, is bad for lungs

So most of my uncles that I have actually come across their smokers. And they are like, come and taste it and am Like no, my mommy will beat me so yeah. My conscious, yeah. When I want to try like… I will be like [Christian] are you sure what you are about to do is good” [everyone laughs]….(Participant, Excellent Stars)

CHAPTER EIGHT

DISCUSSION

8.0 Introduction

The primary aim of this thesis was to determine and design targeted health communication for tobacco use prevention among young people in Nigeria, by utilizing a participatory approach to:

1. Explore how young people can be involved in a participatory process to inform health communication campaigns
2. Highlight and examine the characteristics of messages that are generated by young people for tobacco control health communication in a participatory process
3. Examine how the use of a participatory process can inform the development of tobacco control health communication interventions in Nigeria

The findings from this thesis have demonstrated that involving young people to inform health communication campaigns can be achieved through a participatory process using co-design. The study's findings also revealed that when young people are allowed to inform tobacco control health communication messages and campaigns they will prioritize emotionally evocative content, peer influence, and the influence of authority figures. This demonstrates the need for a more youth-focused approach to designing tobacco control health communication interventions in Nigeria.

The discussion for this thesis is therefore segmented into four main sections. These sections will discuss the findings as they relate to the research objectives along with key learnings from the study.

The first section will discuss using co-design as a methodological approach in participatory research with young people in the context of tobacco use prevention in Nigeria. It will discuss how young people can successfully be involved in a participatory process to inform health communication campaigns in a school community while employing the principles of co-design. In addition, this section will also highlight some theoretical and philosophical considerations in the study.

The second section will discuss the characteristics of messages highlighted by young people for tobacco control health communication in Nigeria. This section will also discuss the key findings

and how they can be used as key points for tobacco control health communication campaigns focused on young people in Nigeria.

The third section of the discussion chapter will address how co-design can inform a new approach to intervention design for tobacco control health communication in Nigeria. In this section, the pivotal role of young people in Nigeria's Tobacco Control Health Communication plan will be discussed.

The final section will conclude with a reflective piece to elucidate key learnings from conducting a co-design study with young people from the perspective of a Nigerian health promoter and researcher.

8.1 Co-design as a methodological approach to facilitate participation of young people in the context of tobacco use prevention in Nigeria

Involving young people in research gives them a platform to share their perspectives, ensuring their voice influence decisions, policies, and practices in line with the UNCRC Article 12 aimed at ensuring right to express views freely. Involving young people in research can also facilitate development of research skills, improved health knowledge and promote a sense of accomplishment and empowerment (Bailey et al., 2024; Brady et al., 2023; Wilson et al., 2020).

Actively involving young people in health promotion research is vital because it provides a unique opportunity for them to shape the narrative and inform interventions that will impact their lives. However, this is lacking in tobacco control health communication in Nigeria, as demonstrated in the scoping and narrative reviews in Chapter Two. This thesis has shown that engaging young people in a participatory process to inform tobacco control health communication campaigns in Nigeria is achievable. It has also shown wider application in informing inclusive and culturally adapted participatory research with young people and other ethnic minority communities who have been reported to be hesitant in engaging with health research and related institutions (Pardhan et al., 2025).

This thesis has also shown that the process is achievable using a multi-phase co-design process that has a "structured-flexibility" which is a term I coined based on the approach to methods used (e.g. structured participant-led drawing) by participants in the thesis. This "structured-flexibility" approach was primarily aimed at ensuring participants were supported to voice or express their

views (Lundy, 2007; Shier, 2001) as recommended in the Lundy model and Shier's five-level pathway for participation.

A co-design process that has a structured-flexibility acknowledges that young people in Nigeria may need to be supported to enable them to confidently articulate their perspectives on tobacco use verbally. This is because tobacco use among young people is a sensitive topic (Egbe et al. 2014; Kirk, 2012) and may not be openly welcomed for discussion.

Supporting young people in tobacco control health communication is important. Especially because the history of tobacco smoking shows the use of visual, audiovisual, and text-based communication by tobacco companies to promote the adoption and use of tobacco products (Barker et al., 2019; Boyd, Boyd, and Greenlee, 2003; U.S. Department of Health and Human Services, 2012). Supporting young people to textually and visually communicate ideas for tobacco use prevention is important, especially as young people are adventurous and increasingly engage in impulsive experimentation of tobacco products (Adu Ismail and Noor, 2022; Oyewole, Animashaun and Chapman, 2018).

A co-design process that has a structured-flexibility also acknowledges the different types of knowledge that young people bring into the co-design process. This thesis has shown that engaging young people in a co-design process using structured drawing tasks can facilitate opportunities for textual and visual representations that can be used in tobacco control health communication campaigns. This is in line with supporting participants to express their views (Lundy, 2007; Shier, 2001). Given that research in tobacco control health communication is mostly facilitated using methods and processes that are more suited to generating text-based messages, the co-design process in this study offers a novel approach to including young people in campaign design that acknowledges the different forms of knowledge. For example, the use of structured drawing tasks facilitated the acknowledgment and acceptance of other forms of knowledge sharing through drawing. Two key examples are the drawings by Team TFT (See Figure 23) and Creative Scholars (See Figure 29). Both teams were able to visually communicate their perspectives for tobacco control health communication campaigns haven been exposed to drawing tasks and not just the use of traditional methods (focus groups, surveys) as adopted in previous studies (Cavallo et al., 2019; Rath et al., 2021; Sangaland et al., 2019). This is similar to the study in Ghana by Poku, Caress and Kirk (2019), who used photo-elicitation to enable adolescents to communicate their experiences with sickle-cell-related fatigue. The authors' use

of visual methods enabled participants to become comfortable in visually communicating through drawings, despite the fact that drawing was not originally part of their methods.

This also implies that a co-design process that incorporates structured-flexibility recognizes that young people should be exposed to varied ways of knowledge sharing in a manner that eases them into the process to facilitate meaningful engagement. This aligns with the study by Wall et al. (2017) where participants were presented with blank comic storyboards to populate with their own words, as a way to support them to share their perspectives. Similarly, the structured-flexibility approach aligns with other studies that adopted flexible participatory and visual methods (socio-spatial mapping, drawing and photo-elicitation) to meaningfully engage young people in place-based (Dar and Chopra, 2024; Honkanen, Poikolainen, and Karlsson, 2017) and context-based (Poku, Caress and Kirk, 2019) research to inform their health and well-being.

8.1.1 A Participatory Approach Facilitates Involvement of Young People

Further to engaging participants to facilitate their participation in the context of Nigeria and tobacco use prevention, I discuss the process of engaging young people meaningfully while generating text and visual communication materials. This is discussed using key cultural considerations in Nigeria and the principles in the co-design process to highlight the involvement of young participants.

This thesis has demonstrated that a participatory approach can facilitate the involvement of young people in tobacco control health communication design in a structured setting. This is similar to other co-design studies that worked with young people in structured settings like schools to facilitate the adoption of an eco-friendly lifestyle (Read et al., 2011) and in designing future technologies (Mechelen, 2016).

Although co-design can be done in a variety of ways, this thesis showed that adopting a participatory approach can ensure that the process and the outputs of the co-design process reflect the choice of the participants. This is in line with participatory models in ensuring power is shared with participants and that participants' views are taken seriously and are acted upon (Lundy, 2007; Shier, 2001). For instance, meeting participants in their schools to first explain and discuss what a co-design process entailed proved useful as they had not engaged in one before. The meeting and discussion enabled participants to ask questions that were important to them

such as how the materials they co-designed would be used, if they would receive documents acknowledging their participation and who would influence the use of the co-designed materials on a national scale given the time they would dedicate to the process.

It is recommended that researchers address some key considerations such as; investing in a co-design process to involve participants by allocating sufficient time and resources, paying or rewarding participants for their time, and lastly, providing training if needed (Slattery, Saeri and Bragge 2020). While these three aforementioned considerations helped facilitate the co-design process, it was more helpful to co-decide with participants in line with key models of participation (Lundy 2007; Shier, 2011), as it limited assumptions on their preferences. Also, while the time spent with participants in a structured setting (their school) was often based on the agreement with the school authority, it was useful to hear from participants what they valued as rewards or incentives for their time rather than assume payments or rewards on their behalf. The adoption of a participatory approach to decision-making for the meeting and discussion before starting the co-design process enabled me to further consider how and what I would invest in the co-design process based on the feedback that they had provided.

Similarly, a key aspect that facilitated participation and ensured that the process and the outputs represented the choice of participants was the use of creative methods. This is also in tandem with participatory models that advice supporting participants to express their views (Lundy 2007; Shier, 2011). First, the use of structured drawing and writing activities enabled participants to move from individual input to group input. This enabled them to reflect on their choices, and facilitated co-decision making throughout the co-design process while also considering participants with diverse learning needs; as written and drawn contributions were considered. Second, the use of structured drawing and writing activities ensured that participants could visualize their thoughts, and compare them with the thoughts of other members which facilitated discussions around a sensitive topic. Third, the use of structured drawing activities was a constant feature in all co-design workshops which enabled participants to become familiar and comfortable with the research process even though they had not previously been involved in a co-design study.

While a variety of participatory and creative methods have been recommended to make the research process conducive and inclusive for participation (Kara, 2020; Mannay et al., 2019), it was pertinent to use methods that aligned with the type of participants (students) and their context (a school in Nigeria). It was also important to consider whether the participants had previously

engaged in a co-design process and how to encourage participation given that smoking among young people is socially and culturally undesirable (Egbe et al. 2014; Kirk, 2012).

This thesis has shown that engaging in consistent use of structured drawing activities ensured that the process had a defined pattern that was not overwhelming for young participants (new to co-design) and was not too difficult to report. Co-designing in workshops is often fraught with the use of different data gathering methods that could sometimes be chaotic, especially during reporting, given the diverse approach to co-design in available literature (Slattery, Saeri and Bragge 2020). Using structured drawing activities proved useful as group drawing activities provided participants the time to brainstorm, agree, disagree, and negotiate in a comfortable atmosphere that facilitated participation. By using a participatory approach and creative methods to co-design, this thesis showed that young people can contribute to tobacco control health communication when given the opportunity and support to express themselves (Lundy 2007; Shier, 2011) through appropriate methods.

Furthermore, this study showed that using a participatory approach can facilitate the involvement of participants through a group naming activity. Naming is a key cultural practice in Nigeria (Olaore and Drolet, 2016) and in African societies (Olatunji et al., 2015). It denotes identity and carries symbolic qualities that are ascribed by the one who gives the name (Mensah, 2023) as the one who gives the name exercises power and agency. The Nigerian culture holds in high regard the naming of a child as the naming is done using a celebratory process called a “naming ceremony” (Olaore and Drolet, 2016). The names given to a child (especially by the parents) becomes the name of the child for their entire life (Mensah, 2023; Olaore and Drolet, 2016). Previous co-design studies in school settings with young people gave room for participants to name their projects (McIntyre, 2008; Mechelen, 2016) to create a sense of ownership. In both studies, participants’ group naming may not have been vital as they worked with participants within one school whereas, in this study, I worked with participants in two schools to accommodate the public and private school systems in Nigeria. The concept of naming was also employed within the Nigerian context, as such, participants were asked not only to name their campaigns but to also name their groups as a key cultural consideration. The names selected by participants were also closely linked to how they saw themselves, how they wanted others to see them, or what they aimed to achieve in the co-design process; which mostly aligns with the primary purpose of naming in Nigeria.

While group naming became a medium for active participation, it also unwittingly became a tool for exclusion. The identity of participants was agreed upon by using group names, but it also created boundaries for inclusion and exclusion. For example, participants within the same school setting were excluded from the group activities if they were not members of a co-design group while members of a group who were not deemed to be active participants were seen as unserious and charged to do better based on some unwritten rules.

There are numerous factors that can hinder participation, such as lack of confidence, shyness, low self-esteem, previous experiences of being ignored, feeling that their opinions are ineffective, absence of a participatory culture, or limited communication skills (Shier, 2001). The use of both verbal and non-verbal methods in data gathering ensured that participants could choose the method they felt most comfortable with and respond anonymously and as a group if they wished. The participatory approach adopted also enabled participants to feel involved in and freely decide on taking part in the study rather than feeling obligated to do so. Participants also felt able to ask questions directly and indirectly, seek clarification regarding the answers provided; negotiate the basis for their participation, and decide on what they would be identified as through group names. These are all vital points in the study ensuring that participants' were given space, voice, audience and influence simultaneously (Lundy, 2007). The participatory approach adopted in this study enabled participants to actively engage in the co-design process which ensured that the outputs were representative of their choices.

8.1.2 Co-design Principles Facilitate Research Ethics with Young People

Co-design principles support research ethics with young people. Co-design in principle demands that power is shared, and that relationships are prioritized (McKercher, 2020; Sendra, 2023). This could be aligned with the ethical principle of justice which seeks fair and equitable distribution of benefits, and burden for all research participants. Power was shared through co-decision making and all participants treated equitably, by using methods that were inclusive. For example, the group naming process was used as a medium to share power as well as ensure that each participant benefited from being part of a significant aspect of the co-design process. Ensuring that participants named their group was also a step in showing them that they would be in control during the co-design process. While this was an enjoyable process, it also helped to facilitate building trust and camaraderie among participants.

Also, co-design in principle supports the use of participatory and democratic methods (McKercher, 2020; Slattery, Saeri and Bragge 2020) to facilitate decision-making by participants. Enabling ease in expressing decisions and ensuring that they are respected is at the core of participatory approaches like co-design. This aligns with UNCRC Article 12 and key participatory models (Lundy Model & Shier's Pathways) which supports enabling young people to freely express their views in safe spaces and for those views to be respected without bias. This outlook situates co-design within a rights-based ideology simultaneously aligning with the ethical tenet of respect for autonomy which seeks the respect of people's decisions, and actions as long as they do not harm others or violate their rights. Participants' autonomy to make decisions in research was respected by using accessible formats to explain the purpose of the research, actively seeking voluntary participation, and making informed consent an ongoing process (Klykken, 2022). Given that participants were students who were approached within a school setting and could feel obligated to participate based on the acceptance of their school gatekeepers; following the co-design principle facilitated the ethical principle in practice, as participants were given room to decide on participating.

Co-design in principle also respects, prioritizes, and protects lived experience with vulnerable populations (Graffigna et al., 2021; Jessup et al., 2018). Protecting lived experience while working with vulnerable populations aligns with the UNCRC Article 3 and the Lundy Model which seeks to ensure that safe and inclusive spaces for expressing views are provided with a child's best interest as a primary consideration. The primary consideration encompasses safety, health and well-being to ensure no harm is done. This outlook also aligns with the ethical tenet of non-maleficence. This alignment was done by facilitating the inclusion of participants with and without lived experience of smoking which in turn preserved anonymity. For example, while the names the seven groups chose gave insight into how they wanted to be addressed, it also helped in ensuring that ethical boundaries were maintained in keeping the participants anonymous. Given the generally negative view on smoking among young people in Nigeria, claiming to practice the habit of smoking would pose a substantial risk, especially among young people below eighteen years who are likely supervised by a parent or guardian tasked with being financially responsible for them. Emphasizing that smoking status would not be exposed (except if the participant chooses to disclose) nor would be a deterrent to participation to ensure diverse engagement and inclusion of young people with lived experience of smoking was more practical and ethically sound.

During the workshops, participants were addressed by the name they chose for their groups and were encouraged to write the names on all materials they produced to facilitate a sense of

ownership and maintain active participation. The selected names became a symbol of identity and ownership but also a medium to support anonymity in the research process, given the cultural and social restrictions around smoking by young people in Nigeria. Also, while the best place to access a diverse host of young people in Nigeria are the schools, the issue of smoking is not one to be presented lightly. The recruitment of participants based on the school's location being proximal to a tobacco sales outlet rather than a participant's smoking status facilitated non-maleficence (risk reduction) in practice while including participants with a variety of lived experiences.

Lastly, co-design in principle supports building capacity, which is a gained from engaging participants in research (Bailey et al., 2024; Wilson et al., 2020). This could be aligned with the ethical tenet of beneficence which seeks the best interest of others and the promotion of their wellbeing. This is why this study ensured that participants were first involved in the co-design workshops before adult stakeholders were brought to the table (See 6.3). This approach enabled participants to not only build capacity but also confidence before they were introduced to an adult community. This thesis has taken a blended approach to operationalizing the Lundy's model (space, voice, influence & audience) in an African context where children' agency is facilitated by adults within a community or family (Fokala, 2017). This approach facilitates a blend of an internationally and regionally accepted model while respecting the African communal culture. In addition, the use of the Socio-ecological Model (SEM) which exemplifies a communal outlook, enabled participants to build capacity in using theoretical frameworks in a practical way within research. By engaging participants to learn what co-design is, how to co-design, and work as a team to achieve a common goal, the co-design principle facilitated the principle of beneficence in practice. This is because participants acknowledged that they had gained improved knowledge and built teamwork skills during the co-design process (See Chapter 7).

8.2 Theoretical Considerations and Challenges

The participatory approach to this study raises some theoretical considerations and challenges. First is that a participatory approach may also imply using a critical lens given the historical applications within feminist research and participatory action research, which both seek emancipation and devolution in power structures (Merriam and Tisdell, 2016). While this assumption is plausible, given that sharing power and the inclusion of young people in research is at the heart of this study, the theoretical stance is much more from a health promotion

perspective that seeks to empower and educate through learning and knowledge sharing. The process of learning and knowledge sharing is also bi-directional as I could learn from my participants and vice versa. By working with participants from this perspective, the theoretical orientation was to facilitate inclusion, fill knowledge gaps, and promote improvement in health interventions.

Second, it was difficult to find a balance that acknowledged a health promotion perspective, a health communication focus, and the democratic process synonymous with the participatory paradigm. To achieve some level of harmony in incorporating these considerations, this thesis attempted two things. First, adopting a constructivist approach to learning and knowledge sharing. This facilitated using methods that enabled participants to reflect individually and construct group knowledge through group activities and interactions. This approach also ensured that participants were able to identify and assess their shared knowledge and determine as a group what they wanted to present going forward (Saleem, Kausar, and Deeba, 2021). Second, this thesis adopted a health promotion model that could be used and shaped by participants in the co-design process, and which could incorporate other theories. This approach provided a medium to combine tobacco control, health communication, and a participatory approach. In adopting the socio-ecological model as a framework for data gathering and not hiding the framework from participants, this thesis ensured that tobacco control health communication was viewed through the eyes of the participants from the knowledge that they shared.

Also, since the model was not hidden from participants, it allowed the study to maintain its participatory co-design approach while simultaneously aligning with an audience-centered approach that is relevant in health communication (Cho, 2012; Cross, Davis and O'Neil, 2017; Noar, 2006; Schiavo, 2014). Participants were able to use the concepts within the model (individual, interpersonal, community, and society) as a tool to frame the messages they thought would work better among young audiences. This allowed the study to attempt a balance between tobacco control, health communication, and a participatory approach, all of which had central roles in this thesis.

Other factors that further validated the choice of the socio-ecological model (SEM) are the context of the study (Nigeria), and the findings from the discovery workshop. First, Nigeria is a multi-ethnic society where individuals are understood based on who they are (individual), their family background (interpersonal), and where they come from or live (Community). As, such, using the socio-ecological model aided participants in working with a structure that was familiar and also

easy to comprehend. In addition, studies have shown that the lives of children and young people occur in a multilayered growth environment that is impacted by place, space, time, and culture (Dar and Chopra, 2024; Honkanen, Poikolainen and Karlsson, 2018; Poku, Caress and Kirk, 2019).

Second, the findings from the discovery workshop further showed that participants were aware of the range of intertwined issues that surround tobacco smoking. The findings showed that participants understood that though smoking was an individual's act; it might be propelled or promoted by other underlying factors related to the individual, and their interpersonal relationships. For example, participants understood (and demonstrated in their drawings) that tobacco use could be influenced by peers, supported or not approved by relatives, facilitate crime, poverty, and addiction in communities, and could be prevented by the government/authorities through policies and law enforcement.

Using the socio-ecological model as a theoretical framework also facilitated glimpses into how participants visualized their roles across social structures and within spaces. For instance, participants could visualize their roles as individuals within families living in communities and generate messages that reflected this (See Chapter Six). On the other hand, participants were not fully able to communicate (in words or drawings) their roles and messages as the social structure expanded from interpersonal to community and society. This could be because the role of young people within the Nigerian community and society is not usually a leading role, as they are expected to defer to persons in positions of authority. This deference and respect for people in authority was also noted in a study in Ghana (Poku, Caress and Kirby, 2019) where participants did not feel comfortable taking photographs of the adults in their lives without explicit permission. This respect for adults is also supported by the African Charter on the Rights and Welfare of the Child, which stipulates that children have a responsibility to respect parents, superiors, and elders at all times (African Union, African Charter on the Rights and Welfare of the Child, 1990, Article 31a p.23). While respect for adults is good and enshrined into the African child, it could also create a premise for why young people do not see themselves as part of the stakeholders to be involved in key decision-making processes. While the UNCRC provides a policy frame for significant consideration of the views of children and young people, the ACRWC leans towards a more communal process of decision-making with the views of adults given more significance. Such contextual or cultural differences could be balanced by treating decision in health research through the lens of Article 3 and Article 12 (UNCRC) and Articles 4 and 7 (ACRWC). Article 4 and 7 of the ACRWC addresses best interest of the child and freedom of expression respectively. This

will facilitate a process that enables the views of young people to be justly considered within spaces that have their best interest and well-being as a priority. This will ensure that young people get the needed support to express their views while enabling them to see the different roles that they can play in influencing policies and interventions that can affect them now and in the future.

8.3 Characteristics of messages prioritized by young people for tobacco control health communication in Nigeria

Although participants did not resonate as much with messages at the community and societal levels, they acknowledged the impact of tobacco use at both levels of interaction. At the community level, participants mainly focused on morals by highlighting moral depreciation and crimes as consequences associated with a community known for smoking activities. At the societal level they acknowledged the vital roles of authority figures like the government in curbing tobacco use through policies.

This thesis has shown that participants mostly prioritized and resonated with messages at the individual and interpersonal levels of interaction, and this was also reflected in the co-designed materials. Materials focused on the harms of smoking, peer and relatives' influence on smoking were more.

Participants prioritized the believability of messages that reflected seeing or visualizing the harms of smoking. These harms were characterized by bodily and mental consequences of smoking. These messages on harms frequently tilted towards displaying scary and emotionally evocative messages (illness, addiction, and death) that they felt would deter young people from engaging in tobacco smoking. In considering scary and emotionally evocative messages, participants mostly visualized messages on consequences such as illness, addiction, and death. They also associated these consequences with mental health challenges and financial loss. It is pertinent to mention that participants in this study were used to public displays by persons addicted to substances such as cannabis and this may have impacted their association of consequences with mental health challenges. Again, terms like depression, mental health challenges, uncontrolled or uninhibited public display, and a lack of capacity to control oneself according to societally accepted standards were often highlighted within similar contexts. Messages characterized by visualizing the bodily and mental consequences of smoking are in tandem with prior studies that have shown that the use of scary and emotionally evocative content is effective in preventing

tobacco use (Oyapero et al., 2021; Perl et al., 2015; Wakefield et al., 2011). The study participants' preference for such messages might also be due to their age range (13-19 years). A prior study by Oyapero et al. (2021) showed that young people below 25 years tend to have a more positive disposition to anti-tobacco messages than people over 25 years. Also, most participants were non-smokers and were negatively disposed to the idea of smoking which is similar to the report by Khalbous and Bouslama (2012), who found that participants who already had a negative attitude towards smoking (anti-smokers) were easier to convince through anti-tobacco advertisements than those who were positively disposed towards smoking (pro-smokers). This negative attitude may have influenced their disposition towards scary and emotionally evocative content. Again, tobacco smoking is considered a bad habit for young people in Nigeria as well as other African countries even though young people could be sent to purchase tobacco products for adults (Egbe et al. 2014; Kirk, 2012).

This perspective of smoking as a disapproved habit may have also influenced the disposition of the participants as they mostly thought smoking was a bad thing even though a few had smoked or experimented with tobacco products at some point. Participants in this co-design study may have tilted more toward scary and emotionally evocative messages given the negative social and cultural disposition to smoking by young people in Nigeria. The negative disposition to smoking while serving as a protective factor may also serve as a limiting factor preventing young people from disclosing that they use tobacco products and as such preventing them from seeking or accessing cessation services. This further strengthens the barriers preventing young people from disclosing that they use tobacco products and seeking help from cessation services to stop smoking. A similar occurrence is visible among young people accessing sexual and reproductive health services (Olajubu, Olowokere and Naanyu, 2025) as they would not want anyone especially their immediate family and religious groups to know that they are sexually active or need sexual and reproductive health services. Along with mental health consequences, participants also associated the consequences of smoking with financial loss. Some participants were familiar with addicted persons pleading to purchase tobacco products and pay at a later date in their community, which may have influenced their association with financial loss and deprivation.

Participants also prioritized messages that were characterized by shades of influence and dealing with influences by peers and relatives. Given the communal lifestyle in Nigeria, peer and parental influence are not surprising discoveries. Other studies researching tobacco smoking among young people have also identified peer and parental influence as root causes of smoking initiation

among young people in Nigeria (Itanyi et al., 2020; Onoh et al., 2023; Oyewole, Animashaun and Chapman, 2018). Other studies have also identified young people as vulnerable to taking up smoking when they have friends and relatives who smoke (Abiola et al., 2016; Odukoya et al., 2014; Onoh et al., 2023) as well as being influenced by media and environmental influences (Abiola et al., 2016; Onoh et al., 2023; Itanyi et al., 2020) all of which align with the findings in this thesis.

The key finding that sets this thesis apart from those in available literature is the different shades or forms of influence highlighted and visualized by participants. Most participants felt peer influence was a primary factor propelling smoking among young people and highlighted this in words and in their posters. They described peer influence in different shades, often in a negative or positive light. Peer influence associated with tobacco smoking was exclusively described in a negative light using the analogy of a “bad friend” or “bad company” which are terms that are missing in the tobacco control literature. While several studies have highlighted the role of peer influence on smoking among young people (Ekpenyong et al., 2024; Itanyi et al., 2020; Onoh et al., 2023; Oyewole, Animashaun and Chapman, 2018) these were mostly studies using quantitative designs and had no textual or visual representation of how young people described peer influence associated with smoking.

How young people visualize a “bad friend” with respect to their role in peer influence is also missing in the tobacco control literature. Most studies on tobacco use in Nigeria are quantitative and do not provide further information on the expressions surrounding peer influence as identified by young people that could be used to influence health communication campaigns. For example, some participants in the study visualized a bad friend as someone who belonged to a cult group and persuaded them to try smoking because others were also doing it. This expression would most likely be different in another study context. A young person in the United Kingdom or the United States of America may not see a “bad friend” or a “cult friend” as someone who encourages them to smoke tobacco products but may resonate with the expression “gang influence” as a contextual reference for bad friends or bad company. One area of strong agreement was the use of shisha among young people influenced by peers. Female participants in particular gave account of being lured to try shisha as it was perceived as less harmful. Participants acknowledged that while cigarettes should not be sidelined, more focus should be on other tobacco products like shisha. This was because young people felt shisha was less harmful than smoking cigarettes given its sweet and enticing flavour. It is also important to mention that

participants who mostly acknowledged the influence of peers on smoking were male participants. Although female participants acknowledged this factor, male participants were more vocal about it. Also, most participants implicitly acknowledged that mothers were a protective factor while male counterparts like fathers, brothers, cousins, and uncles were not in comparison to mothers. The protective element embedded within gender roles (in the context of Nigeria) against tobacco use is an area that could be better explored.

This thesis also showed that participants prioritized messages reflecting the authority figures in their lives. These authority figures were either internal or external. Internal authority figures were parents and other relatives. Participants spoke about how parents who paid keen attention (demonstrating interest in their wellbeing) and warned them against following “bad friends” or engaging in “bad habits” facilitated their decision to not engage in smoking. Mothers were often the authority figures described in this light. External figures were those within their immediate environments like adult members of the community they resided in and their school authority. Other external authority figures were popular influencers in the music and movie industry. Participants keenly recounted how certain individuals who were popular with young people could sway them to stop smoking and influence their smoking habits. Although the influence of authority figures was demonstrated in this thesis, the place of social media as a platform for wielding authority was also underscored by participants.

Similarly, the study by Karlestos et al. (2021) reported the use of internal authority figures (parents), peers of young people and social media to assess the mediating effect of interpersonal communication in tobacco control campaigns. The authors noted that campaign effects was mostly influenced by discussions among adolescent peers, while conversations with adults had no significant impact. In addition, the authors reported that peer conversations served as a key mediator for female adolescents but did not have the same effect on male adolescents. This further highlights the place of peer influence but also the place of gender considerations, and social media in tobacco control campaigns.

The co-designed outputs in this study provides visual artefacts evidencing the need to involve young people in intervention design not just in tobacco control heath communication but in health research in general. Participants in the study designed 12 posters (See Appendix 23,) a song (See Appendix 20) and a short video (See Appendix 19) that was later revised after feedback to an animation (see Appendix 22). The animation is a key communication tool as participants highlighted it could be used to reach a wide range of young people within the school environment

and other social-digital spaces (WhatsApp, Facebook, Instagram and Tik Tok.) outside the school environment. The animation message aligns with participants lived experience of how peer influence can drive smoking and how family influences can serve as a buffer to prevent harmful health behaviours.

8.4 How can co-design inform a new approach to intervention development for tobacco control health communication in Nigeria?

Co-design presents a novel approach that can be leveraged to involve young people in Nigeria's tobacco control health communication intervention and agenda. Involving young people in the development of tobacco control health communication ensures that their (evolving) perspectives shape both the focus and the output.

First, engaging in co-design aids a transparent research process and facilitates participation. Given the school setting is an available and accessible social structure within Nigeria, involving young people in their school not only creates room for mass participation but also provides an avenue for young participants to learn and become involved in tobacco control. For example, the co-design process in this thesis enabled the participants to become aware of the World Health Organization World No Tobacco Day (WNTD) commemorated on May 31st annually. This knowledge propelled the participants' interests as they were not previously aware. By involving young people from the six geopolitical zones in Nigeria, through a co-design process, tobacco control health communication can sufficiently address the knowledge gaps and health risks that are important to young people while simultaneously addressing the contextual differences in the six different regions. This will ensure that young people in every region in Nigeria are sufficiently represented in Nigeria's tobacco control health communication. This approach serves a vital purpose not only for Nigeria but also for other African countries, as it provides a system to design with young people for young people. Nigeria can also benefit from a co-design approach by modifying some school-based interventions. For example, as was done in the ASSIST school intervention (Campbell et al., 2008), influential young people could be involved in informally discussing about smoking with their peers. In addition, young people could be supported to facilitate open discussions with their peers about smoking during school club activities, as in-person and online peer interpersonal interactions have been shown to facilitate campaign success (Evans et al., 2020; Karletsos et al., 2021). Such conversations that are also based on what young people think is important for their peers and not only based on a pre-prepared teaching plan

(Brown et al., 2019; Vigna-Taglianti et al., 2021), could aid in the co-design of suitable materials that are contextually relevant, and which resonate with young people.

Secondly, young Nigerians are undeniably key drivers of change and involving them in a co-design process acknowledges their role not just as vulnerable targets (ATCA, 2016; Itanyi et al., 2020) but also as change agents. This thesis showed that young participants acknowledged the dual role of social media as a key factor in tobacco use promotion and prevention. Involving young people in a co-design process facilitates the combination of change agents (young people) and their preferred channels of communication (e.g. social media). This combination is important as successful health communication campaigns have been identified as using a variety of communication channels for extensive dissemination (Noar, 2006; Hutchison et al., 2020) to reach their target audience. In engaging co-design for tobacco control health communication in Nigeria, the focal group being an important part of the design process would likely also be a driving force for widespread dissemination in rural and urban regions through interpersonal communication (Karletsos et al., 2021).

Thirdly, co-design affords a unique opportunity for young Nigerians to be involved in shaping tobacco control policy and practice. By engaging young people in the design phase and implementation of tobacco control health communication interventions, they can inform policies and practices that align with their perspectives. The recently launched Nigeria Tobacco Control Communication strategy (2024 – 2026) outlines the use of varied messages and communication materials that will be used on national platforms to address the myths and knowledge gaps surrounding tobacco use among young people. While this is a laudable start, the strategy does not highlight how young people will be involved in intervention design and implementation which is a missed opportunity to ensure that young people become key drivers for the implementation of the strategy by 2026. For example, through the co-design process, this thesis highlighted three result themes that can be used as three campaign themes for young people in Nigeria. These themes represent the present reality of young people who were simultaneously involved in message generation and campaign design. Co-design offers a unique approach to equitably involve young people as their experiences and reality evolve and possibly also redefine Nigeria's Tobacco Control Communication strategy.

8.5 Reflections on Key Learnings

8.5.1 Broadly Defining Lived Experience

Tobacco smoking is considered a bad habit or a deviant behaviour for young people in Nigeria as well as other African countries even though young people could be sent to purchase tobacco products for adults (Egbe et al. 2014; Kirk, 2012). This perspective of smoking as a disapproved habit was re-validated as the results from the questionnaire in the first workshop (discovery phase) showed that over 79% of young people in the study thought smoking was a bad thing even though they had also smoked or experimented with tobacco products at some point.

This negative perspective of smoking is likely why available research studying tobacco use among young people in schools tends to adopt a quantitative approach (Itanyi et al., 2020; Odukoya et al., 2014; Oyewole, Animashaun and Chapman, 2018) or instead focus on young adults who can give consent without input from a parent (Egbe et al., 2014; Kirk, 2012). Using a quantitative approach would likely facilitate studying the issue as it presents fewer risks for the participant, the researcher, and the participating schools. The participant, whether a smoker or a non-smoker is at liberty to reveal their smoking status in a questionnaire that cannot be linked to them. The researcher is also less burdened with the responsibility of limitations in confidentiality if they were obligated to involve the school authority and ultimately the parents of participating minors who are identified as smokers.

In their study, Singh et al. (2014) resorted to recruiting Ghanaian female smokers at brothels to include them in the focus group sample due to recorded low smoking rates among women or possibly due to unclear means of recruitment as being identified as a female smoker in the African context does not tell of good morals unlike their male counterparts. This moral and gender-biased view of smoking was similarly demonstrated in the qualitative study in Mali (Kirk, 2012) where young people elaborated on the unfavourable perception of being a smoker based on gender and being young.

In co-design, designing with individuals who have lived experience is vital as it gives validation to the design ensuring it is built for purpose (McKercher, 2020). This study did not actively search for young people who were smokers as the research focus was more focused on prevention than cessation plus separating smokers and non-smokers in the study would have posed a level of risk as previously explained. As such, I depended on available literature to guide the selection of schools rather than selection of people as previous studies had shown that the proximity of tobacco sales outlets near schools increases vulnerability to smoking (ATCA, 2016; Itanyi et al., 2020; Osuh, Fagbule and Olatunji, 2020).

In other to encourage the participation of young people in the study and simultaneously adhere to key ethical (non-maleficence) and co-design principles (respect and protection of lived experience), participants were encouraged to participate by using a broad definition of lived experience. For instance, participants were recruited based on their school location being proximal to a tobacco sales outlet (300 feet) rather than participant smoking status, and asked to participate if they smoked and/or had relatives or friends who smoked. By broadly defining lived experience, participants who were smokers and non-smokers were able to safely participate in the study.

While the best place to access a diverse host of young people in Nigeria are the schools, the issue of smoking is not one to be presented lightly, as such, facilitating active participation in tobacco control health communication with young people requires careful consideration, diplomacy, and a broad definition of lived experience.

8.5.2 Facilitating Participation Means Asking and Negotiating

Negotiating and facilitating voluntary buy-in in a participatory study is not new but it is vital. A key success of participatory research is the degree to which there is participant buy-in and active participation (Merriam and Tisdell, 2016 p. 51). Buy-in or the lack of it is a pointer to how the research process will eventually go. This is because buy-in signals active participation and “active participation is the key to feelings of ownership that motivate people to invest their time and energy to help shape the nature and the quality of the acts, activities, and behaviours in which they engage” (Stringer, 2014). Participatory research evaluation is also linked to how well the researcher has implemented the core principles of the method employed (Leavy 2023 p. 253); as such how buy-in was negotiated and facilitated was critical for this study.

The process for facilitating participation was accomplished by actively seeking the involvement of the school authority. The authorities in the selected schools were presented with the opportunity to choose if they would like to participate or not as an ongoing process in the study. Gaining buy-in from the school authority was achieved through a careful but clear presentation of the research purpose and actively seeking the schools’ “access limit”. A school’s access limit can come in the form of an agreed meeting location, the number of workshops held, hours spent with the participants, and the number of school visits allowed. In this study, a maximum of four workshops

lasting for a maximum of ninety minutes each and an undefined number of school visits were agreed upon with participating schools, with school visits subject to the needs of the participants after a workshop.

In the process of seeking participation and successfully establishing a school's "access limit", it will in turn reveal the level of participation to expect from the school. This was the case in one of the schools I approached for the study. The school head was not particularly convinced about the study nor ready to participate, and this was reflected in his attitude while engaging with me about the process and the amount of time that would need to be invested by the participants. The lack of conviction to participate cannot entirely be said to be his fault, as conducting a qualitative study focused on tobacco use prevention among young people and research using co-design as a methodological template within a secondary school setting is not common in Nigeria.

From the available literature, only three studies have thus far applied co-design as a methodological approach in Nigeria. Two engaged its use with adults and young adults in the tertiary education space (Rinnert et al., 2021; Agbo et al., 2021) while one engaged it within a community as part of a community-based participatory intervention study to improve reproductive health services for young people (Cockcroft et al., 2022).
In this light, I was first given access to speak with young people within the school, present the purpose of the study, and underscore the fact that smokers and non-smokers are welcome to participate. Upon agreeing to meet for further discussions, this study dedicated a separate meeting that was purposely held with young people in the two consenting schools to go through all items in the participant information sheet and answer any questions including those anonymously written on papers. The in-person opportunity to define the purpose of the study, gain buy-in, and recruit participants also opened the avenue for critical feedback and negotiation.

In the course of explaining the purpose of the study to potential participants, questions about why the study only focused on tobacco use and not drugs including the justification for giving their time were brought up. I resolved this iteratively by ensuring that subsequent meetings with other potential participants included why the focus was on tobacco smoking and why they should consider participating. The aspect of why they should consider participating was achieved by aligning it with a key construct of co-design – getting the voice of young people heard in how tobacco use messages and campaigns are conducted in Nigeria. Although getting the voice of young people heard is a core benefit of participatory research and simultaneously aligns with the

UNCRC Article 12, other benefits of involvement in research are also vital. For example, In the course of this study, participants gained creative research skills, particularly in using drawing and doing data analysis collaboratively and deciding on the segments of data that was important for them and their peers. Participants' knowledge on tobacco-related health problems also improved as key misconceptions were addressed during co-design workshops (See Appendix 18). Overall, they also felt empowered as their opinions were respected and their involvement culminated in the design of a key communication tool (See Appendix 22) focused on young people like them. These benefits are in tandem with other studies where benefits for involving young people in research were reported (Bailey et al., 2024; Brady et al., 2023; Wilson et al., 2020).

Another burning question that was brought up was how I was going to ensure that after all the work was done their voice would count in the scheme of things. The participants from the private school were more vocal about this aspect than those from the government-owned schools. The guide from McKercher (2020 p. 67) proved helpful in this regard. In her book, she noted that those with the ability to influence how things are done must be involved in the co-design process. As a health promoter and someone who has worked as a middle person between schools and tobacco control bodies, I knew I could bring these individuals to the table. With this in mind, I told my potential participants that they would be meeting with tobacco control bodies and people who could influence tobacco control in Nigeria at a stakeholder's workshop after we decided what the message and communication should be. Giving room for participants to ask questions and seek further clarification if needed remained an ongoing process in this study addressed using school visits.

8.5.3 Iteratively Building Knowledge and Addressing Misconception

The process of discovery gave room for the participants to identify the relevant issues to tackle for tobacco smoking prevention among young people. This approach, though not the usual method engaged in research with young people for tobacco control in Nigeria was welcomed by the study participants. The participants identified the root causes of smoking among young people using a structured but flexible method (structured participant-led drawing) that enabled them to participate as individuals and as a group in the process. This approach (from individual to group) was useful given the difficulties encountered by other researchers. The study by McIntyre (2008) and Wall et al. (2017) mentioned the difficulties they encountered with regard to data management and analysis when they worked with a large number of participants in schools.

The participants from the seven groups identified five root causes of smoking among young people in Nigeria: peer influence, family influence/background, mental health challenges, social media influence, and environmental challenges. The identified root causes thus provided the foundation for the anti-tobacco messages generated in the idea generation phase of the co-design process. While the identified root causes laid the foundation for successive co-design workshops, the data also showed misconceptions that participants had about smoking (See Chapter 5). The iterative approach to building knowledge through successive co-design workshops allowed me to address these misconceptions during the co-design process. This enabled participants to ask questions, seek clarifications, and form new knowledge.

8.6 Strengths and Limitations in the Thesis

8.6.1 The School Setting as a Strength and a Limitation

The school setting facilitates access to a variety of young people in Nigeria. While it provided access to a host of participants and served as a unit for non-maleficent sampling, it also came with its unique strengths and challenges.

A key strength is the public and private school system operated in Nigeria, which allowed for the recruitment of participants from two schools. Analysing the data from two schools facilitated some level of data validation as participants from the different schools presented similar data. For example, participants from both schools acknowledged that peer influence was a primary factor for tobacco use among young people. A factor that has also been reiterated by other studies (Egbe et al., 2014; Oyewole, Animashaun and Chapman, 2018). Similarly, participants from both schools acknowledged that social media and the school environment were their main choices for reaching young people virtually and in person. The dual influence of social media in promoting the use of tobacco products (Adu, Ismail, and Noor, 2022) and propagating the spread of anti-tobacco messages among young people (Hutchison et al., 2020; Karletsos et al., 2021) has also been demonstrated in the available literature. In this thesis, participants in the private school were keener on virtual methods of health communication than participants from the public school. Participants in the public school also seemed more in tune with using the space within their school environment for health communication than their counterparts in the private school who found it difficult to resonate with using their school as a space for health communication. This could be a pointer to the different socio-economic status of participants in the two school systems in Nigeria, as participants in the private school system are more likely to have personal mobile phones with access to the internet and social media.

Some limitations in using the school as a sampling unit and as a co-design site were; participants conflating the workshop with a class (session in school), the presence of a chaperone (e.g. teacher), and co-designed materials being better suited for in-school children than those that are out-of-school.

Although the school setting is one of the key spaces utilized in data gathering on tobacco control among young people (ATCA, 2016; Ekanem 2010; Fagbule and Osuh, 2020) as it facilitates data gathering data amongst diverse participants, it also comes with its fair share of challenges. First, using the school setting as a co-design site had some limitations that manifested when participants referred to the co-design workshops as a class. While this was corrected severally by ensuring participants understood that the co-design process would be participatory and would respect their choices and decisions; some participants still used the term class to refer to co-design sessions. This could be a pointer to the influence of the study site on participants' choice of words or the fact that they saw themselves as students participating in a process that facilitated their learning (See Chapter 5 – addressing misconception).

Second, the presence of a chaperone (e.g. teacher) at different intervals during the co-design sessions served as a reminder for the students that though the process would facilitate their participation, it was being done in their place of learning. The school setting had its own rules and organization. For instance, the sound of a bell (and the way it was rang) indicated a new class, a break session, or the end of school. Though participants found the process meaningful, the sound of the school bell could mean that they would be in a co-design session while others went home or that they were free to leave class (especially if they did not like it) to come for a co-design session instead. During the co-design sessions, we addressed this by ensuring participants were able to leave if they wanted to or we rounded up each session at the sound of the closing bell.

Third, the co-designed materials may be better suited for in-school children who have clear social structures (parents, guardians, and friends). This is because the co-designed outputs come with some assumptions such as clear social structures which are usually absent for out-of-school children. As such, the co-design materials may not be the most suitable for them; especially as audience segmentation is a vital factor for targeted and successful health campaigns (Noar, 2006). Also, the susceptibility to smoking and the rate of smoking among out-of-school children has been reportedly higher than those that are in a school (Oyewole et al., 2018), as such

materials more focused on cessation than prevention may be better suited for out-of-school children.

8.6.2 The Limitations of Stopping at Feedback in Co-design

In the co-design of health interventions, the development phase is usually followed by implementation and an evaluation which seeks to establish the feasibility and effectiveness of the intervention with the focal group; it is therefore vital to point out the limitation in ending the process at the feedback phase. This study stopped at feedback because the primary goal was to co-design a health communication intervention with the participants. The feedback phase of the co-design process was also the phase with the least number of participants. Most participants were preparing for the holidays and decided to nominate group representative(s) that they felt would represent their interests. Of the seven groups, representatives from four groups attended the feedback session.

Future studies can use the co-designed video in school settings and test its effectiveness among school-going participants. Although the studies by Adebiyi et al. (2016) and Odukoya et al. (2014) tested anti-tobacco materials that were not co-designed with young people; both studies offer a good approach to facilitate implementation and testing among young people in Nigeria. In particular, the non-randomized controlled intervention design used by Odukoya et al. (2014) to assess the effect of a short school-based anti-tobacco program in secondary schools within Lagos state offers a feasible approach that can be applied to effectively test the co-designed materials in a Nigerian school setting.

8.6.3 Underestimating the Willingness of Participants

Given the negative perception associated with smoking by young people in Nigeria, I ensured I was careful in prompting discussions about smoking habits. This was to ensure I did not create opportunities for participants to be identified as smokers during workshops and group discussions which would impact limitations in confidentiality as highlighted in the participant information sheet (See Appendix 9). Considering the risk and ethical need to balance disclosure and safeguarding in this study, I ensured participants were aware that they could withdraw from the study if they wanted with no consequence. This was facilitated through a process of ongoing consent (Klykken,

2022) and ensuring participants could request for recordings to be paused at certain points during discussions.

Finding a balance between experiential knowledge sharing and staying within the limits of confidentiality was facilitated by asking questions that were not directed at individuals but at groups. For example, I would ask participants to share the messages they would use to prevent smoking among “young people that they know” or among “young people like themselves”. This enabled participants to share information and experiences that would be useful in preventing smoking without directly sharing any personal experience of engaging in smoking.

While I was conscious of being careful to present the topic, participants were more forthcoming than I had anticipated. They were happy to share their experiences of relatives who were smokers and experiences of being lured to smoke by friends and even of different products that fascinated young people. Although I underestimated their willingness to share their experiences with smoking, they were comfortable with sharing, which goes to show that the participants in the study were more reflexive than I gave them credit for. Again, this could be due to the approach to the study where participants had first worked as a group and determined what was important before sharing with me with the aid of their drawings.

CHAPTER NINE

CONCLUSION AND RECOMMENDATION FOR FUTURE RESEARCH

9.1 Conclusion

Tobacco control health communication research focused on young people is an area that has not received much attention in Africa and in Nigeria. Addressing the lack of active involvement of young people in this research area has been the focus of this thesis. The drive to address this focus stems not only from the observed gap in literature, but also because young people should rightly be involved in designing their health communication in a process that supports them to do so.

This thesis has therefore demonstrated that tobacco control health communication can involve young people by using a flexibly structured participatory approach that considers contextual and cultural implications. The consideration for context and culture has wider implications for both the field of participatory research and involvement of young people in health research. This is because studies from other regions especially those involving ethnic minority groups can take a cue and ensure that cultural representations, mindsets, concepts or ideas are respected and not relegated to the background when researching with young people. The outputs in this thesis further confirms that contextual considerations or a de-colonial lens matter as participants designed materials not just in the official English Language used in Nigeria but also in a locally accepted language (e.g Nigerian Pidgin English).

This thesis has also demonstrated that the dissonance between available anti-tobacco materials and the perspectives of young Nigerians can be bridged through a co-design approach. By working with young people to bridge this gap, this thesis has contributed to informing health communication campaigns that includes and prioritizes the perspectives of young audiences. This approach sets the trajectory for future studies seeking to involve young people in tobacco control and health communication to align with key principles (UNCRC) and models of participation (Fokala, 2017; Lundy, 2001; Shier, 2011) while maintaining a contextually-appropriate position.

In addition, by using a co-design approach with participants in schools settings, this thesis has laid the foundation for potentially integrating mass media campaigns and school-based prevention initiatives. By engaging participants in schools in a co-design process, the participants have

become active contributors, not only in constructing their learning but also the learning of young people outside their school environment. This has the potential of creating far reaching impact than school-based initiatives and mass media campaigns would reach individually. As shown in the literature, school-based interventions and mass media campaigns are effective tobacco control strategies with young people (Chido-Amajuoyi et al., 2024; Duke et al., 2019) which could propel positive ripple effects due to on-line and in-person interpersonal interactions (Dobbie et al., 2019; Hutchison et al., 2021), and community event participation (Brown et al., 2019). The ripple effect that could come from designing mass media campaigns with participants in schools could possibly double, which would be of huge benefit to low-middle-income countries with funding constraints for tobacco control campaigns.

At various stages in this doctoral journey although my title as a doctoral researcher remained the same, my role was fluid and never static. I moved from health promoter to researcher, and then to facilitator as needed to ensure that participants were actively supported to participate in the study. This fluidity in roles was pivotal in ensuring that this thesis aligned with participatory principles and that the perspectives of participants remained central.

9.2 Recommendation for Future Research

Some recommendations for future research based on the findings from this thesis include:

- Examine the shades of peer influence associated with tobacco use among young people in the six geo-political zones in Nigeria by using storytelling to facilitate collaborative building of campaign concepts
- Adapt and test co-designed materials for anti-tobacco mass media campaigns

This would facilitate the determination of specific campaign materials that would best resonate with young audiences in the different geo-political zones in Nigeria

- Examine and address skills gap that limit young people from identifying their role and ability to influence research and interventions

This could be done through mapping exercises (asset and skills) to enable young people identify key areas they need to build to facilitate participation in research and decision-making

- Co-designing health communication with out-of-school children for tobacco control

Tobacco use among out-of-school children is higher than those among in-school groups (Oyewole, Animashaun and Chapman, 2018). It is vital to work with key groups and organizations to facilitate trust-building to be able to work with out-of-school groups. The research will also have to consider that an anti-tobacco intervention with out-of-school groups may require considerations for essential needs to enable them to make meaningful contributions. For example, what type of compensation would they need for their time? Will they receive support with food, smoking cessation support, medical care, job search etc. as these are needs that would impact their participation.

- Protective factors embedded in gendered cultural roles

The protective element embedded within gender roles (in the context of Nigeria) against tobacco use is an area that could be better explored. This is because participants contextualize mothers as a protective authority figure against habits like smoking while male relatives (fathers, cousins and uncles) are situated as figures promoting the use of tobacco producuts and smoking.

REFERENCES

Abade Edu (2019). Controversy over Smoke-Free world campaign. The Guardian. Accessed August 31, 2021. https://guardian.ng/features/health/controversy-over-smoke-free-world-campaign/

Abiola A, Balogun O, Odukoya O, Olatona F, Odugbemi T, Moronkola R, Solanke A, Akintunde O, Fatoba O. (2016). Age of initiation, Determinants and Prevalence of Cigarette Smoking among Teenagers in Mushin Local Government Area of Lagos State, Nigeria. Asian Pacific Journal of Cancer Prevention, 17(3):1209-14

Abraham, E., Egbe, C. and Ayo-Yusuf, O. (2019). News media coverage of shisha in Nigeria from 2014 to 2018. *Tobacco Induced Diseases*, 17. https://doi.org/10.18332/tid/106139

Abubakar, I., Dalglish, S.L., Angell, B., Sanuade, O., Abimbola, S., Adamu, A.L., Adetifa, I.M.O., Colbourn, T., Ogunlesi, A.O., Onwujekwe, O., Owoaje, E.T., Okeke, I.N., Adeyemo, A., Aliyu, G., Aliyu, M.H., Aliyu, S.H., Ameh, E.A., Archibong, B., Ezeh, A. and Gadanya, M.A. (2022). The Lancet Nigeria Commission: Investing in Health and the Future of the Nation. *The Lancet*, 399(10330), pp.1155–1200. https://doi.org/10.1016/S0140-6736(21)02488-0.

Achia, T.N.O. (2015). Tobacco Use and Mass Media Utilization in Sub-Saharan Africa. *PLOS ONE*, 10(2). doi:https://doi.org/10.1371/journal.pone.0117219.

Adams, M.L., Jason, L.A., Pokorny, S. and Hunt, Y. (2013). Exploration of the Link Between Tobacco Retailers in School Neighborhoods and Student Smoking. *Journal of School Health*, 83(2), pp.112–118. https://doi.org/10.1111/josh.12006

Adebiyi, A. O.; Uchendu, O. C.; Bamgboye, E.; Ibitoye, O.; Omotola, B. (2016). Perceived Effectiveness of Graphic Health Warnings as a Deterrent for Smoking Initiation among Adolescents in Selected Schools in Southwest Nigeria. *Tobacco Induced Diseases*, *14* (1). https://doi.org/10.1186/s12971-016-0074-y.

Adeloye, D., Auta, A., Fawibe, A., Gadanya, M., Ezeigwe, N., Mpazanje, R.G., Dewan, M.T., Omoyele, C., Alemu, W., Harhay, M.O. and Adewole, I.F. (2019). Current prevalence pattern of tobacco smoking in Nigeria: a systematic review and meta-analysis. *BMC Public Health*, 19(1). https://doi.org/10.1186/s12889-019-8010-8

Adler, P. A., & Adler, P. (1987). Membership roles in field research. SAGE Publications, Inc., https://doi.org/10.4135/9781412984973

Adu, A.O., Ismail, N. and Noor, S.Md. (2022). Motivators of impulsivity to smoke waterpipe tobacco among Nigerian youth who smoke waterpipe tobacco: the moderating role of social media normalisation of waterpipe tobacco. *BMC Public Health*, 22(1). doi:https://doi.org/10.1186/s12889-022-13386-4.

African Tobacco Control Alliance (ATCA) (2023). Africa Tobacco Industry Interference Index. Available at: https://index2023.atca-africa.org/2023-Africa-Regional-Report-on-Tobacco-Industry-Interference-Index-VF.pdf

African Tobacco Control Alliance (ATCA) (2016). Tobacco Industry Accountability Project Tobacco Industry Targets Schools in Africa: Big Tobacco Tiny Targets. Regional Report African Tobacco Control Alliance *(ATCA)*. Lome-Togo. Available at: https://atca-africa.org/wp-content/uploads/2021/04/ATCA-TIA-Regional-report.pdf (Accessed 15 February 2021)

African Tobacco Control Alliance (ATCA) (2021) The Big Tobacco Allies: How tobacco companies use intermediaries to foster their Corporate Social Responsibility initiatives and promote their image in Nigeria. Available at: https://cappaafrica.org/wp-content/uploads/2021/04/Correction-ATCA-TakeApart-Nigeria-A5-Final.pdf. (Accessed August 16, 2023)

African Tobacco Control Alliance (ATCA) African Tobacco Industry Interference Index 2023. Available online: https://atca-africa.org/africa-tobacco-industry-interference-index/ (Accessed November 5, 2023).

African Union (1990). *African Charter On The Rights And Welfare Of The Child*. Available at: https://au.int/sites/default/files/treaties/36804-treaty african_charter_on_rights_welfare_of_the_child.pdf

Agaku, I.T., Omaduvie, U.T., Filippidis, F.T. and Vardavas, C.I. (2014). Cigarette design and marketing features are associated with increased smoking susceptibility and perception of reduced harm among smokers in 27 EU countries. *Tobacco Control*, 24(e4), pp.233–240. https://doi.org/10.1136/tobaccocontrol-2014-051922

Agbo, F.J., Oyelere, S.S., Suhonen, J. and Laine, T.H. (2021). Co-design of mini games for learning computational thinking in an online environment. *Education and Information Technologies*. https://doi.org/10.1007/s10639-021-10515-1

Agee, J. (2009). Developing Qualitative Research questions: a Reflective Process. *International Journal of Qualitative Studies in Education*, 22(4), pp.431–447. https://doi.org/10.1080/09518390902736512

Aghdam, F. B., Alizadeh, N., Nadrian, H., Augner, C., & Mohammadpoorasl, A. (2021). Effects of a multi-level intervention on hookah smoking frequency and duration among Iranian adolescents and adults: an application of socio-ecological model. *BMC Public Health*, *21*(1). https://doi.org/10.1186/s12889-021-10219-8

Ajuwon, A.J. and Brieger, W.R. (2007). Evaluation of a school-based reproductive health education program in rural South Western, Nigeria. *African Journal of Reproductive Health* 11(2), pp.47–59. Available at: https://pubmed.ncbi.nlm.nih.gov/20690287/

Allen, J.A., Duke, J.C., Davis, K.C., Kim, A.E., Nonnemaker, J.M. and Farrelly, M.C. (2015). Using mass media campaigns to reduce youth tobacco use: a review. *American journal of health promotion: AJHP*, 30(2), pp.71-82. doi:https://doi.org/10.4278/ajhp.130510-LIT-237.

Andersen, L.F., Bere, E., Kolbjornsen, N. and Klepp, K-I. (2004). Validity and reproducibility of self-reported intake of fruit and vegetable among 6th graders. European Journal of Clinical Nutrition, 58(5), pp.771–777. https://doi.org/10.1038/sj.ejcn.1601875

Anderson, C. L.; Becher, H.; Winkler, V. (2016). Tobacco Control Progress in Low and Middle Income Countries in Comparison to High Income Countries. *International Journal of Environmental Research and Public Health*, *13* (10). https://doi.org/10.3390/ijerph13101039.

Andrews, J.A., Gordon, J.S., Hampson, S.H., Gunn, B., Christiansen, S.M. and Slovic, P. (2014). Long-Term Efficacy of Click City: Tobacco: A School-Based Tobacco Prevention Program. *Nicotine & Tobacco Research*, 16(1), pp.33–41. doi:https://doi.org/10.1093/ntr/ntt106.

Asfar, T., Schmidt, M., Ebrahimi Kalan, M., Wu, W., Ward, K. D., Nakkash, R. T., Thrasher, J., Eissenberg, T., Ben Romdhane, H., & Maziak, W. (2020). Delphi study among international expert panel to develop waterpipe-specific health warning labels. *Tobacco Control*, tobaccocontrol-2018-054718. https://doi.org/10.1136/tobaccocontrol-2018-054718

Atoyebi, O.A., Ibirongbe, D.O., Babatunde, O. and Atoyebi, O.E. (2013). To start and quit smoking cigarettes: an evaluation of students in a Nigerian city. *Journal of Preventive Medicine and Hygiene* 54(2), p.104. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC4718382/

Atusingwize E., Lewis S., Langley T. Economic evaluations of tobacco control mass media campaigns: a systematic review. (2015). Tobacco Control 24:320-327 doi:10.1136/tobaccocontrol-2014-051579

Austin, J., Van Dijk, J., and Drossaert, C. (2020) When theory meets users in co-design: four strategies towards synergy between bottom-up and top-down input, in Boess, S., Cheung, M. and Cain, R. (eds.), *Synergy - DRS International Conference 2020*, 11-14 August, Held online. https://doi.org/10.21606/drs.2020.152

Azagba, S.; Burhoo, P.; Chaloupka, F. J.; Fong, G. T. (2015). Effect of Cigarette Tax Increase in Combination with Mass Media Campaign on Smoking Behaviour in Mauritius: Findings from the ITC Mauritius Survey. *Tobacco Control*, *24*, 71–75. https://doi.org/10.1136/tobaccocontrol-2014-052096.

Bader, P., Boisclair, D. and Ferrence, R. (2011). Effects of Tobacco Taxation and Pricing on Smoking Behavior in High Risk Populations: a Knowledge Synthesis. *International Journal of Environmental Research and Public Health*, 8(11), pp.4118–4139. doi:https://doi.org/10.3390/ijerph8114118.

Bailey, K., Allemang, B., Vandermorris, A., Munce, S., Cleverley, K., Chisholm, C., Cohen, E., Davidson, C., Asil El Galad, Leibovich, D., Lowthian, T., Pillainayagam, J., Ramesh, H., Samson, A., Vjura Senthilnathan, Siska, P., Snider, M. and Toulany, A. (2024). Benefits, barriers and

recommendations for youth engagement in health research: combining evidence-based and youth perspectives. *Research Involvement and Engagement*, 10(1). https://doi.org/10.1186/s40900-024-00607-w

Balazs, C. L., & Morello-Frosch, R. (2013). The three Rs: How community-based participatory research strengthens the rigor, relevance, and reach of science. *Environmental Justice*, *6*(1), 9–16. https://doi.org/10.1089/env.2012.0017

Bandura, A. (1991). Social Cognitive Theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2), pp.248–287. doi:https://doi.org/10.1016/0749-5978(91)90022-L

Barker, A.B., Britton, J., Thomson, E., Hunter, A., Opazo Breton, M. and Murray, R.L. (2019). A content analysis of tobacco and alcohol audio-visual content in a sample of UK reality TV programmes. *Journal of Public Health*, 42(3), pp.561–569. https://doi.org/10.1093/pubmed/fdz043.

Baumann S.E., Lhaki P., Burke J.G. (2020). Collaborative Filmmaking: A Participatory, Visual Research Method. *Qualitative Health Research* 30(14):2248-2264 10.1177/1049732320941826
Baumgartner, T. A., Strong, C. H., & Hensley, L. D. (2002). Conducting and reading research in health and human performance (3rd ed.). New York: McGraw-Hill.

Brady, L.-M., Miller, J., McFarlane-Rose, E., Noor, J., Noor, R. and Dahlmann-Noor, A. (2023). 'We know that our voices are valued, and that people are actually going to listen': co-producing an evaluation of a young people's research advisory group. *Research Involvement and Engagement*, 9(1). https://doi.org/10.1186/s40900-023-00419-4

Brady, L.-M. and Graham, B. (2018). Social Research with Children and Young People. *Bristol* Policy Press. Available at: https://doi.org/10.51952/9781447352792.

Bekalu, M. A.; Gundersen, D. A.; Viswanath, K. (2022). Beyond Educating the Masses: The Role of Public Health Communication in Addressing Socioeconomic- and Residence-Based Disparities in Tobacco Risk Perception. *Health Communication*, *37* (2), 214–221. https://doi.org/10.1080/10410236.2020.1831755.

Bell, J., Condren, M. (2016). Communication Strategies for Empowering and Protecting Children. *Journal of Pediatric Pharmacology and Therapeutics* Vol. 21, pp 176–184.

Beresford, P. (2021) *Participatory Ideology: From exclusion to involvement. Bristol* Policy Press. Available at: https://policy.bristoluniversitypress.co.uk/participatory-ideology

Biglan, A., Ary, V.D., Smolkowski, K., Duncan, T. and Black, C. (2000). A randomised controlled trial of a community intervention to prevent adolescent tobacco use. *Tobacco Control*, 9(1), pp.24–32. doi:https://doi.org/10.1136/tc.9.1.24.

Bilano, V.; Gilmour, S.; Moffiet, T.; D'Espaignet, E. T.; Stevens, G. A.; Commar, A.; Tuyl, F.; Hudson, I.; Shibuya, K. (2015). Global Trends and Projections for Tobacco Use, 1990-2025: An Analysis of Smoking Indicators from the WHO Comprehensive Information Systems for Tobacco Control. *The Lancet 385* (9972), 966–976. https://doi.org/10.1016/S0140-6736(15)60264-1.

Bjerknes G, Ehn P, Kyng P. (1987). Computers and Democracy. Aldershot: Avebury

Blecher, E.; Ross, H. (2013). Tobacco Use in Africa: Tobacco Control through Prevention. *American Cancer Society*, 1–16

Bobo, J. K., & Husten, C. (2000), Sociocultural influences on smoking and drinking. *Alcohol Research & Health 24*(4), 225–232.

Borzekowski, D. L. G.; Cohen, J. E. (2013). International Reach of Tobacco Marketing among Young Children. *Pediatrics*, *132* (4). https://doi.org/10.1542/peds.2013-1150.

Borzekowski, D. L. G.; Cohen, J. E. (2014). Young Children's Perceptions of Health Warning Labels on Cigarette Packages: A Study in Six Countries. *Journal of Public Health*, *22* (2), 175–185. https://doi.org/10.1007/s10389-014-0612-0.

Bowen, S., Sustar, H., Wolstenholme, D. and Dearden, A. (2013). Engaging teenagers productively in service design. *International Journal of Child-Computer Interaction*, 1(3-4), pp.71–81. https://doi.org/10.1016/j.ijcci.2014.02.001

Bowling A. (2002). Research methods in health (second edition). Buckingham: Open University Press. https://archive.org/details/researchmethodsi0000bowl_d8k1/page/n9/mode/2up

Boyd, H., McKernon, S., Mullin, B., and Old, A. (2012). Improving healthcare through the use of co-design. N Z Med J. 29;125(1357):76-87. PMID: 22854362

Boyd, T.C., Boyd, C.J. and Greenlee, T.B. (2003). A Means to an End: Slim Hopes and Cigarette Advertising. *Health Promotion Practice*, 4(3), pp.266–277. https://doi.org/10.1177/1524839903004003011

Brown, L. D., Bandiera, F. C. and Harrell, M. B. (2019). 'Cluster Randomized Trial of Teens Against Tobacco Use: Youth Empowerment for Tobacco Control in El Paso, Texas', *American Journal of Preventive Medicine*, 57(5), pp. 592–600. doi: 10.1016/j.amepre.2019.06.013.

Brown, N. and Collins, J. (2021). Systematic Visuo-Textual Analysis: A Framework for Analysing Visual and Textual Data. *The Qualitative Report, 26*(4), 1275-1290. DOI: 10.46743/2160-3715/2021.4838

Brown, T., and Wyatt, J. (2010). "Design Thinking for Social Innovation." *Stanford Social Innovation Review* 8 (1): 31–35.

Bush, P. L., Pluye, P., Loignon, C., Granikov, V., Wright, M. T., Pelletier, J.-F., Bartlett-Esquilant, G., Macaulay, A. C., Haggerty, J., Parry, S., & Repchinsky, C. (2017). Organizational participatory research: A systematic mixed studies review exposing its extra benefits and the key factors associated with them. *Implementation Science*, *12*(1). https://doi.org/10.1186/s13012-017-0648-y

Campaign For Tobacco Free Kids 2021a. Tobacco Control Laws: Legislation By Country (Nigeria).Available at: https://www.tobaccocontrollaws.org/legislation/country/nigeria/laws (Accessed August 30, 2021)

Campbell, R., Starkey, F., Holliday, J., Audrey, S., Bloor, M., Parry-Langdon, N., Hughes, R. and Moore, L. (2008). An informal school-based peer-led intervention for smoking prevention in adolescence (ASSIST): a cluster randomised trial. *The Lancet*, 371(9624), pp.1595–1602. https://doi.org/10.1016/s0140-6736(08)60692-3

Cargo, M., & Mercer, S. L. (2008). The value and challenges of participatory research: Strengthening its practice. *Annual Review of Public Health*, *29*(1), 325–350. https://doi.org/10.1146/annurev.publhealth.29.091307.083824

Carson, K.V., Ameer, F., Sayehmiri, K., Hnin, K., van Agteren, J.E., Sayehmiri, F., Brinn, M.P., Esterman, A.J., Chang, A.B. and Smith, B.J. (2017). Mass media interventions for preventing smoking in young people. *Cochrane Database of Systematic Reviews*, 6(6). doi:https://doi.org/10.1002/14651858.cd001006.pub3.

Cavallo, D. A.; Kong, G.; Ells, D. M.; Camenga, D. R.; Morean, M. E.; Krishnan-Sarin, S. (2019). Youth Generated Prevention Messages about Electronic Cigarettes. *Health Education Research 34* (2), 247–256. https://doi.org/10.1093/her/cyz001.

Centers for Disease Control and Prevention (CDC) (2024). About Violence Prevention: A Framework for Prevention. Available at: https://www.cdc.gov/violence-prevention/about/index.html

Centers for Disease Control and Prevention (CDC). Best Practices User Guide: Health Communications in Tobacco Prevention and Control. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health (2018), Available at: https://www.cdc.gov/tobacco/stateandcommunity/guides/pdfs/health-communications-508.pdf (Accessed 10 June 2021)

Centre for the Study of the Economies of Africa (CSEA) (2021). Health Burden and Economic Costs of Tobacco Smoking in Nigeria. Available at: https://www.cseaafrica.org/images/posts/3283225632319411.pdf

Chan, K. (2018). A Design Thinking Mindset Beyond the Public Health Model. *World Medical & Health Policy*, 10(1), pp.111–119. https://doi.org/10.1002/wmh3.253

ChangeLab Solutions (2019) Tobacco Retailer Density: Place-Based Strategies to Advance Health and Equity. Available at: https://www.changelabsolutions.org/product/tobacco-retailer-density

Chevalier, J.M., and Buckles, D. J. (2019). Participatory Action Research: Theory and Methods for Engaged Inquiry (2nd ed.). Routledge. https://doi.org/10.4324/9781351033268

Chido-Amajuoyi, G. O., Osaghae, I., Agaku, T. I., Chen, B. and Mantey, D.S. (2024). Exposure to school-based tobacco prevention interventions in low-income and middle-income countries and its association with psychosocial predictors of smoking among adolescents: a pooled cross-sectional analysis of Global Youth Tobacco Survey data from 38 countries. *BMJ open*, 14(2), pp.e070749–e070749. https://doi.org/10.1136/bmjopen-2022-070749

Cho, H. (2012). Health Communication Message Design: Theory and Practice. SAGE Publications

City Population (2021) (Edo State, Nigeria) - Population Statistics, Charts, Map and Location. Available at: https://citypopulation.de/en/nigeria/admin/NGA012__edo/.

Cockcroft, A., Omer, K., Gidado, Y., Mohammed, R., Belaid, L., Ansari, U., Mitchell, C. and Andersson, N. (2022). Impact-Oriented Dialogue for Culturally Safe Adolescent Sexual and Reproductive Health in Bauchi State, Nigeria: Protocol for a Codesigned Pragmatic Cluster Randomized Controlled Trial. *JMIR Research Protocols*, 11(3), p.e36060. https://doi.org/10.2196/36060

Coghlan, D., and Brydon-Miller, M. (2014). *The SAGE Encyclopedia of Action Research*: Constructivism. https://doi.org/10.4135/9781446294406.n83

Coombs, J., Bond, L., Van, V. and Daube, M. (2011). 'Below the Line': The tobacco industry and youth smoking. *The Australasian medical journal*, 4(12), pp.655–73. doi:https://doi.org/10.4066/AMJ.20111018.

Cornwall, A., & Jewkes, R. (1995). What is participatory research? *Social Science & Medicine*, *41*(12), 1667–1676. https://doi.org/10.1016/0277-9536(95)00127-s

Coyne, I. and Carter, B. (2018). Being Participatory: Researching with Children and Young People. Springer International Publishing Available at: https://link.springer.com/book/10.1007/978-3-319-71228-4

Creswell, J.W. and Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 5th Edition, SAGE Publication Inc.* Available at: https://edge.sagepub.com/creswellrd5e

Crews F, He J, Hodge C. (2007). Adolescent cortical development: a critical period of vulnerability for addiction. PharmacolBiochemBehav.86:189–99.

Cross, R., Davis, S. and O'Neil, I. (2017). *Health Communication*. John Wiley & Sons. https://www.wiley.com/en-us/Health+Communication%3A+Theoretical+and+Critical+Perspectives-p-9780745697727

Croucher, S.M. (2015). *Understanding Communication Theory*. *Routledge eBooks*. Informa. https://doi.org/10.4324/9781315796710

Dar, A. and Chopra, D. (2024). Participatory and co-design approaches for migrant girls' wellbeing: A study in an urban informal settlement of Delhi. *Wellbeing, space and society*, pp.100201–100201. https://doi.org/10.1016/j.wss.2024.100201

Davis A, Wright C, Murphy S, Dietze P, Temple-Smith M, Hellard M, Lim M (2020). A Digital Pornography Literacy Resource Co-Designed With Vulnerable Young People: Development of "The Gist" J Med Internet Res 22(6) https://www.jmir.org/2020/6/e15964

De Lang, N. and Geldenhuys, M. M. (2012). 'Youth envisioning safe schools: A participatory video approach', *South African Journal of Education*, 32(4), pp. 494–511. doi: 10.15700/saje.v32n4a734.

Delgado-Lobete L, Montes-Montes R, Vila-Paz A, Cruz-Valiño J-M, Gándara-Gafo B, Talavera-Valverde M-Á, Santos-del-Riego S. (2020). Individual and Environmental Factors Associated with Tobacco Smoking, Alcohol Abuse and Illegal Drug Consumption in University Students: A Mediating Analysis. *International Journal of Environmental Research and Public Health*. 17(9):3019. https://doi.org/10.3390/ijerph17093019

Denicolo, P., Long, T., & Bradley-Cole, K. (2016). Constructivist Approaches and Research Methods: A Practical Guide to Exploring Personal Meanings: "Introduction and orientation to constructivist research". https://dx.doi.org/10.4135/9781526402660.n1

Desalu, O.O., Iseh, K.R., Olokoba, A.B, Salawu, F.K. and Danburam, A. (2010). 'Smokeless tobacco use in adult Nigerian population' *Nigerian Journal of Clinical Practice*, 13(4), pp. 382–387.

Dobbie, F., Purves, R., McKell, J., Dougall, N., Campbell, R., White, J., Amos, A., Moore, L. and Bauld, L. (2019). Implementation of a peer-led school based smoking prevention programme: a mixed methods process evaluation. *BMC Public Health*, 19(1). doi:https://doi.org/10.1186/s12889-019-7112-7.

Dockett, S., Perry, B. (2011). Researching with Young Children: Seeking Assent. *Child Indicators Research 4*, 231–247. https://doi.org/10.1007/s12187-010-9084-0

Doku, D., Koivusilta, L., Raisamo, S., & Rimpelä, A. (2012). Tobacco use and exposure to tobacco promoting and restraining factors among adolescents in a developing country. *Public Health*, *126*(8), 668–674. https://doi.org/10.1016/j.puhe.2012.05.003

Donovan, D. (2016). How children represent sustainable consumption through participatory action research and co-design of visual narratives. *International Journal of Consumer Studies*, 40(5), pp.562–574. https://doi.org/10.1111/ijcs.12301

Drope J, Schluger N, Cahn Z, Drope J, Hamill S, Islami F, Liber A, Nargis N, Stoklosa M. (2018). The Tobacco Atlas. Sixth Edition. Atlanta, GA, USA: American Cancer Society and Vital Strategies. ISBN:978-1-60443-257

Drope, J. (2011) Tobacco control in Africa: People, politics and policies, Tobacco Control in Africa: People, Politics and Policies. Available at: https://doi.org/10.7135/UPO9780857288134

Duke, J.C., MacMonegle, A.J., Nonnemaker, J.M., Farrelly, M.C., Delahanty, J.C., Zhao, X., Smith, A.A., Rao, P. and Allen, J.A. (2019). Impact of The Real Cost Media Campaign on Youth Smoking Initiation. *American Journal of Preventive Medicine*, 57(5), pp.645–651. https://doi.org/10.1016/j.amepre.2019.06.011

Durkin, S.; Bayly, M.; Cotter, T.; Mullin, S.; Wakefield, M. (2013). Potential Effectiveness of Anti-Smoking Advertisement Types in Ten Low and Middle Income Countries: Do Demographics, Smoking Characteristics and Cultural Differences Matter? *Social Science and Medicine*, *98*, 204–213. https://doi.org/10.1016/j.socscimed.2013.09.022

Egbe, C.O., Egbochuku, E.O., Petersen, I. and Meyer-Weitz, A. (2016). Cigarette smoking among Southern Nigerian youth and what geopolitical zones got to do with it. *Vulnerable Children and Youth Studies*, 11(3), pp.251–262. doi:https://doi.org/10.1080/17450128.2016.1192710.

Egbe, C. O., Petersen, I. and Meyer-Weitz, A. (2014). Addressing a Threat to the Healthfulness of Tomorrow's Generation The Case of Cigarette Smoking in Nigeria. *Qualitative Research in Education*, 3(3), pp. 273–294. doi: 10.4771/qre.2014.48.

Egbe, C. O., Egbochuku, E.O., Meyer-Weitz, A., & Petersen, I. (2017). A qualitative exploration of the theory of triadic influence in a Nigerian setting: the case of cigarette smoking. *Psychological Studies, 62(3), 314-325.* https://doi.org/10.1007/s12646-017-0419-5

Egbe, C. O.; Magati, P.; Wanyonyi, E.; Sessou, L.; Owusu-Dabo, E.; Ayo-Yusuf, O. A. (2022). Landscape of Tobacco Control in Sub-Saharan Africa. *Tobacco Control*, *31* (2), 153–159. https://doi.org/10.1136/tobaccocontrol-2021-056540.

Egbe, C.O., Bialous, S.A. and Glantz, S.A. (2017) 'Avoiding "A Massive Spin-Off Effect in West Africa and Beyond": The Tobacco Industry Stymies Tobacco Control in Nigeria', *Nicotine & Tobacco Research: Official Journal of the Society for Research on Nicotine and Tobacco*, 19(7), pp. 877–887. Available at: https://doi.org/10.1093/ntr/ntx037

Egbe, C.O., Petersen, I., Meyer-Weitz, A. and Oppong Asante, K. (2014). An exploratory study of the socio-cultural risk influences for cigarette smoking among Southern Nigerian youth. *BMC Public Health*, 14(1). https://doi.org/10.1186/1471-2458-14-1204

Ekanem, A.I., Asuzu, M.C., Anunobi, C.C., Malami, S.A., Jibrin, P.G., Ekanem, A.D. and Onyemelukwe, G.C. (2010). 'Prevalence of tobacco use among youths in five centres in Nigeria: A global youth tobacco survey (GYTS) approach 1 1.', *Journal of Community Medicine and Primary HealthCare*, 22, pp. 62–67.

Ekpenyong, M.S., Halimat Jagun, Stephen, H.A., Bakre, A.T., Opeyemi Odejimi, Miller, E., Nyashanu, M. and Bosun-Arije, S.F. (2024). Investigation of the Prevalence and factors Influencing Tobacco and Alcohol use among Adolescents in Nigeria: A systematic literature review. *Drug and Alcohol Dependence*, pp.111091–111091. doi:https://doi.org/10.1016/j.drugalcdep.2024.111091.

Esmail, L., Moore, E. and Rein, A. (2015). Evaluating patient and stakeholder engagement in research: moving from theory to practice. *Journal of Comparative Effectiveness Research*, 4(2), pp.133–145. https://doi.org/10.2217/cer.14.79

Estrada, E., Ramirez, A.S., Gamboa, S. and Amezola de herrera, P. (2018). Development of a Participatory Health Communication Intervention: An Ecological Approach to Reducing Rural Information Inequality and Health Disparities. *Journal of Health Communication*, 23(8), pp.773–782. https://doi.org/10.1080/10810730.2018.1527874

Ethical Research Involving Children (2013). *Child-Centered Research - ERIC Philosophy, Right of Children*. Available at: https://childethics.com/child-centered-research/

Evans, W., Andrade, E., Pratt, M., Mottern, A., Chavez, S., Calzetta-Raymond, A. and Gu, J. (2020). Peer-to-Peer Social Media as an Effective Prevention Strategy: Quasi-Experimental Evaluation. *JMIR mHealth and uHealth*, 8(5), p.e16207. https://doi.org/10.2196/16207

Fagbule, O. and Osuh, M. (2020). Predictors of exposure to secondhand tobacco smoke among non-smoking in-school adolescents in Ibadan, Nigeria. *Population Medicine*. doi: https://doi.org/10.18332/popmed/125362

Farrelly, M. C.; Davis, K. C.; Duke, J.; Messeri, P. (2009). Sustaining "Truth": Changes in Youth Tobacco Attitudes and Smoking Intentions after 3 Years of a National Antismoking Campaign. *Health Education Research 24* (1), 42–48. https://doi.org/10.1093/her/cym087.

Farrelly, M. C.; Davis, K. C.; Lyndon Haviland, M.; Messeri, P.; Healton, C. G. (2005). Evidence of a Dose-Response Relationship Between "Truth" Antismoking Ads and Youth Smoking Prevalence *95* (3). https://doi.org/10.2105/AJPH.

Federal Ministry of Health and Social Welfare of Nigeria (FMoHSW), National Population Commission (NPC) [Nigeria], and ICF (2024). Nigeria Demographic and Health Survey 2023–24: Key Indicators Report. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.

Flay, B. R., Snyder, F., & Petraitis, J. (2009). The Theory of Triadic Influence. In R. J. DiClemente, M. C. Kegler & R. A. Crosby (Eds.), Emerging Theories in Health Promotion Practice and Research (Second ed., pp. 451-510). NewYork: Jossey-Bass Available at:

https://www.researchgate.net/publication/224942235_The_Theory_of_Triadic_Influence (Accessed 20 December 2024).

Fokala, E. (2017). Implementing children's right to participation in family decision-making processes in Africa. Åbo Akademi University Press. Available at: https://www.doria.fi/bitstream/handle/10024/144086/fokala_elvis_mukumu.pdf?sequence=2

Gallus, S., Lugo, A., Stival, C., Cerrai, S., Clancy, L., Filippidis, F.T., Gorini, G., Lopez, M.J., López-Nicolás, Á., Molinaro, S., Odone, A., Soriano, J.B., Tigova, O., van den Brandt, P.A., Vardavas, C.I. and Fernandez, E. (2021). Electronic Cigarette Use in 12 European Countries: Results From the TackSHS Survey. *Journal of Epidemiology*. doi:https://doi.org/10.2188/jea.je20210329.

Gilmore, A. B.; Fooks, G.; Drope, J.; Bialous, S. A.; Jackson, R. R. Exposing and Addressing Tobacco Industry Conduct in Low-Income and Middle-Income Countries. (2015). *The Lancet 385* (9972), 1029–1043. https://doi.org/10.1016/S0140-6736(15)60312-9.

Given, L. M. (2008). Credibility. *The SAGE Encyclopedia of Qualitative Research Methods*. https://doi.org/10.4135/9781412963909.n77

Global Alliance for Tobacco Control Strategic Plan 2022-2025. Available at: https://fctc.org/resource-hub/gatc-strategic-plan-2022-2025/ (Accessed October 17, 2022)

Goodchild, M., Nargis, N. and Tursan d'Espaignet, E. (2017). Global Economic Cost of smoking-attributable Diseases. *Tobacco Control*, 27(1), pp.58–64. https://doi.org/10.1136/tobaccocontrol-2016-053305

Graffigna, G., Gheduzzi, E., Morelli, N., Barello, S., Corbo, M., Ginex, V., Ferrari, R., Lascioli, A., Feriti, C. and Masella, C. (2021). Place4Carers: a multi-method participatory study to co-design, piloting, and transferring a novel psycho-social service for engaging family caregivers in remote rural settings. *BMC Health Services Research*, 21(1). https://doi.org/10.1186/s12913-021-06563-5

Green, J., and Thorogood, N. (2018) *Qualitative Methods for Health Research*. 4th edition, SAGE Publications. Available at: https://us.sagepub.com/en-us/nam/qualitative-methods-for-health-research/book254905

Groundwater-Smith, S., Dockett, S., & Bottrell, D. (2015). Participatory research with children and young people. SAGE Publications Ltd, https://doi.org/10.4135/9781473910751

Guillemin, M. (2004). Understanding Illness: Using Drawings as a Research Method. Qualitative Health Research, 14(2), pp.272–289. https://doi.org/10.1177/1049732303260445.

Guillemin, M. and Drew, S. (2010). Questions of process in participant-generated visual methodologies. Visual Studies, 25(2), pp.175–188. https://doi.org/10.1080/1472586x.2010.502676

Haerens, L., Deforche, B., Maes, L., Stevens, V., Cardon, G. and De Bourdeaudhuij, I. (2006). Body Mass Effects of a Physical Activity and Healthy Food Intervention in Middle Schools. *Obesity*, 14(5), pp.847–854. https://doi.org/10.1038/oby.2006.98

Hagen, P., Collin, P., Metcalf, A., Nicholas, M., Rahilly, K., & Swainston, N. (2012). Participatory design of evidence-based online youth mental health promotion, intervention and treatment.

Hamill, S., Turk, T., Murukutla, N., Ghamrawy, M., & Mullin, S. (2013). I 'like' MPOWER: using Facebook, online ads and new media to mobilise tobacco control communities in low-income and middle-income countries. *Tobacco Control*, *24*(3), 306–312. https://doi.org/10.1136/tobaccocontrol-2012-050946

Hamilton, P. (2016) The Workshop Book: How to design and lead successful workshops. Pearson Education Limited. Available at: https://www.waterstones.com/book/the-workshop-book/pamela-hamilton/9781292737317

Hammagabdo, A., Bakki, B., Amodu, M. and Omotara, B.A. (2018). Prevalence and factors influencing cigarette smoking among young adults in a tertiary institution in Borno State, Nigeria. *Research Journal of Health Sciences*, 6(4), p.218. doi:https://doi.org/10.4314/rejhs.v6i4.8.

Hetrick, S.E., Goodall, J., Yuen, H.P., Davey, C.G., Parker, A.G., Robinson, J., Rickwood, D.J., McRoberts, A., Sanci, L., Gunn, J., Rice, S. and Simmons, M.B. (2017). Comprehensive Online Self-Monitoring to Support Clinicians Manage Risk of Suicide in Youth Depression. *Crisis*, 38(3), pp.147–157. https://doi.org/10.1027/0227-5910/a000422

Honkanen, K., Poikolainen, J. and Karlsson, L. (2017). Children and young people as co-researchers – researching subjective well-being in residential area with visual and verbal methods. *Children's Geographies*, 16(2), pp.184–195 https://doi.org/10.1080/14733285.2017.1344769

Hutchinson, P.; Leyton, A.; Meekers, D.; Stoecker, C.; Wood, F.; Murray, J.; Dodoo, N. D.; Biney, A. (2020). Evaluation of a Multimedia Youth Anti-Smoking and Girls' Empowerment Campaign: SKY Girls Ghana. *BMC Public Health 20* (1). https://doi.org/10.1186/s12889-020-09837-5.

Ibrahim, J.K. and Glantz, S.A. (2007). The Rise and Fall of Tobacco Control Media Campaigns, 1967–2006. *American Journal of Public Health*, [online] 97(8), pp.1383–1396. https://doi.org/10.2105/AJPH.2006.097006

Isip, U., Calvert, J. Analyzing big tobacco's global youth marketing strategies and factors influencing smoking initiation by Nigeria youths using the theory of triadic influence (2020). *BMC Public Health* 20, 377. https://doi.org/10.1186/s12889-020-8451-0

Itanyi, I.U., Onwasigwe, C.N., Ossip, D., Uzochukwu, B.S.C., McIntosh, S., Aguwa, E.N., Wang, S., Onoka, C.A. and Ezeanolue, E.E. (2020). Predictors of current tobacco smoking by

adolescents in Nigeria: Interaction between school location and socioeconomic status. *Tobacco Induced Diseases*, 18(13). https://doi.org/10.18332/tid/117959

Iyiola, O.O. (2008) *Influence of Marketing on Tobacco Consumption Behavior in Rural and Urban Areas of the Southwestern Region of Nigeria*. Available at: https://play.google.com/store/books/details/Influence_of_Marketing_on_Tobacco_Consumption_Beha?id=1TRItPISHAgC&hl=en_GB&pli=1 (Accessed: 13 December 2024).

James, P. B., Bah, A. J., Kabba, J. A., Kassim, S. A., & Dalinjong, P. A. (2022). Prevalence and correlates of current tobacco use and non-user susceptibility to using tobacco products among school-going adolescents in 22 African countries: a secondary analysis of the 2013-2018 global youth tobacco surveys. *Archives of Public Health*, *80*(1). https://doi.org/10.1186/s13690-022-00881-8

Janssens, K.A.M., Bos, E.H., Rosmalen, J.G.M., Wichers, M.C. and Riese, H. (2018). A qualitative approach to guide choices for designing a diary study. BMC Medical Research Methodology, 18(1). https://doi.org/10.1186/s12874-018-0579-6

JBI Manual For Evidence Synthesis. Available Online: https://jbi-global-wiki.refined.site/space/MANUAL/4687579/Appendix+11.1+JBI+template+source+of+evidence+details%2C+characteristics+and+results+extraction+instrument (Accessed July 15, 2023)

Jessen, S., Mirkovic, J. and Ruland, C.M. (2018). Creating Gameful Design in mHealth: A Participatory Co-Design Approach. *JMIR mHealth and uHealth*, 6(12), p.e11579. https://doi.org/10.2196/11579

Jessup, R.L., Osborne, R.H., Buchbinder, R. and Beauchamp, A. (2018). Using co-design to develop interventions to address health literacy needs in a hospitalised population. *BMC Health Services Research*, 18(1). https://doi.org/10.1186/s12913-018-3801-7

Kanmodi, K. and Kanmodi, P. (2020). Combatting the silent shisha epidemic in Nigeria: The need for public health education. *Population Medicine*, 2(June). https://doi.org/10.18332/popmed/120967

Kara, H. (2020). Creative Research Methods: A Practical Guide. Second Edition. Bristol University Press. Available at: https://policy.bristoluniversitypress.co.uk/creative-research-methods

Kara, H., Mannay, D., and Roy, A. (2024). The Handbook of Creative Data Analysis. Bristol University Press. Available at: https://policy.bristoluniversitypress.co.uk/the-handbook-of-creative-data-analysis

Karletsos, D.; Hutchinson, P.; Leyton, A.; Meekers, D. (2012). The Effect of Interpersonal Communication in Tobacco Control Campaigns: A Longitudinal Mediation Analysis of a Ghanaian Adolescent Population. *Preventive Medicine 142*. https://doi.org/10.1016/j.ypmed.2020.106373.

Kathrin, W.; Rachel, S.; Sainan, Z. (2017). The Demographic Dividend Atlas for Africa: Tracking the Potential for a Demographic Dividend. UNFPA. Available online https://www.unfpa.org/resources/demographic-dividend-atlas-africa-tracking-potential-demographic-dividend (Accessed October 17, 2023)

Kebede Y, Abebe L, Alemayehu G, Sudhakar M, Birhanu Z (2020) School-based social and behavior change communication (SBCC) advances community exposure to malaria messages, acceptance, and preventive practices in Ethiopia: A pre-posttest study. PLoS ONE 15(6): e0235189. https://doi.org/10.1371/journal.pone.0235189

Khalbous, S., & Bouslama, H. (2012). Tobacco Socialization and Anti-Tobacco Ad Effectiveness Among Children. *Health Marketing Quarterly* *29*(2), 97–116. https://doi.org/10.1080/07359683.2012.678255

Kindon, S., Pain, R. and Kesby, M. (2007). *Participatory Action Research Approaches and Methods*. Routledge.

King, J.L., Merten, J.W., Wong, T.-J. and Pomeranz, J.L. (2017). Applying a Social–Ecological Framework to Factors Related to Nicotine Replacement Therapy for Adolescent Smoking Cessation. *American Journal of Health Promotion*, 32(5), pp.1291–1303. https://doi.org/10.1177/0890117117718422

Kirby, P. (2004) *A Guide to Actively Involving Young People in Research: For Researchers, Research Commissioners, and Managers. Eastleigh UK: INVOLVE. ISBN 0-9541215-3-8*

Kirk, A. (2012). How Influences on Teenage Smoking Reflect Gender and Society in Mali, West Africa. *JRSM Short Reports 3* (1), 1–8. https://doi.org/10.1258/shorts.2011.011138.

Klein, E.G., Forster, J.L., Erickson, D.J., Lytle, L.A. and Schillo, B. (2008). The relationship between local clean indoor air policies and smoking behaviours in Minnesota youth. *Tobacco Control*, 18(2), pp.132–137. doi:https://doi.org/10.1136/tc.2007.024307.

Klykken, F. H. (2022). Implementing continuous consent in qualitative research. Qualitative Research, 22(5), 795-810. https://doi.org/10.1177/14687941211014366

Kothari, A., Edwards, N., Yanicki, S. and Hansen-Ketchum, P. (2007). *Socioecological Models: Strengthening Intervention Research in Tobacco Control*. Available at: https://drogues-sante-societe.ca/wp-content/uploads/2012/10/vol6_no1_11_ang.pdf (Accessed 17 March 2022)

Kreuter, M. W.; Wray, R. J. (2003). Tailored and Targeted Health Communication: Strategies for Enhancing Information Relevance. *American Journal of Health Behavior*, Vol. 27. https://doi.org/10.5993/ajhb.27.1.s3.6.

Kuipers, M.A.G., Beard, E., West, R. and Brown, J. (2017). Associations between tobacco control mass media campaign expenditure and smoking prevalence and quitting in England: a time series

analysis. Tobacco Control 27(4), pp.455-462 https://doi.org/10.1136/tobaccocontrol-2017-053662.

Lasebikan, V.O., Ola, B.A. and Lasebikan, T.O. (2019). Shisha smoking in selected nightclubs in Nigeria. *Pan African Medical Journal*, 33. https://doi.org/10.11604/pamj.2019.33.136.17149

Leavy, P. (2022). *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches* (2nd ed.). The Guilford Press.

Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care* 4(3), pp.324–327. https://doi.org/10.4103/2249-4863.161306

Liao, Y., Wu, Q., Tang, J., Zhang, F., Wang, X., Qi, C., He, H., Long, J., Kelly, B.C. and Cohen, J. (2016). The efficacy of mobile phone-based text message interventions ('Happy Quit') for smoking cessation in China. *BMC Public Health*, 16(1). doi:https://doi.org/10.1186/s12889-016-3528-5.

Ling, P.M.; Kim, M.; Egbe, C.O.; Patanavanich, R.; Pinho, M.; Hendlin, Y. *(2022).* Moving targets: How the rapidly changing tobacco and nicotine landscape creates advertising and promotion policy challenges. *Tobacco Control 31*, 222–228. https://doi.org/10.1136/tobaccocontrol-2021-056552

Locke, L. F., Spirduso, W. W., and Silverman, S. L. (2013). Proposal that work: A guide for planning dissertations and grant proposals (6th ed.). Thousand Oaks, CA: Sage

Lundy, L. (2007). 'Voice' Is Not enough: Conceptualising Article 12 of the United Nations Convention on the Rights of the Child. *British Educational Research Journal* 33(6), pp.927–942. https://doi.org/10.1080/01411920701657033

Lutz, W.; Kc, S. (2010). Dimensions of Global Population Projections: What Do We Know about Future Population Trends and Structures? *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365* (1554), 2779–2791. https://doi.org/10.1098/rstb.2010.0133.

MacMonegle, A. J., Smith, A. A., Duke, J., Bennett, M., Siegel-Reamer, L. R., Pitzer, L., Speer, J. L., & Zhao, X. (2022). Effects of a National Campaign on Youth Beliefs and Perceptions About Electronic Cigarettes and Smoking. *Preventing Chronic Disease*, *19*. https://doi.org/10.5888/pcd19.210332

MacMonegle, A.J., Nonnemaker, J., Duke, J.C., Farrelly, M.C., Zhao, X., Delahanty, J.C., Smith, A.A., Rao, P. and Allen, J.A. (2018). Cost-Effectiveness Analysis of The Real Cost Campaign's Effect on Smoking Prevention. *American Journal of Preventive Medicine*, 55(3), pp.319–325. https://doi.org/10.1016/j.amepre.2018.05.006

Malboeuf-Hurtubise, C., Léger-Goodes, T., Mageau, G.A., Taylor, G., Herba, C.M., Chadi, N. and Lefrançois, D. (2021). Online art therapy in elementary schools during COVID-19: results from a

randomized cluster pilot and feasibility study and impact on mental health. *Child and Adolescent Psychiatry and Mental Health*, 15(1). https://doi.org/10.1186/s13034-021-00367-5.

Malone, R. E.; Grundy, Q.; Bero, L. A. (2012). Tobacco Industry Denormalisation as a Tobacco Control Intervention: A Review. *Tobacco Control*, *21* (2), 162–170. https://doi.org/10.1136/tobaccocontrol-2011-050200

Mamudu, H. M.; Subedi, P.; Alamin, A. E.; Veeranki, S. P.; Owusu, D.; Poole, A.; Mbulo, L.; Ogwell Ouma, A. E.; Oke, A. (2018). The Progress of Tobacco Control Research in Sub-Saharan Africa in the Past 50 Years: A Systematic Review of the Design and Methods of the Studies. *International Journal of Environmental Research and Public Health*, *15* (12). https://doi.org/10.3390/ijerph15122732.

Mannay, D. (2016) Visual, Narrative and Creative Research Methods: Application, reflection and ethics. Routledge https://doi.org/10.4324/9781315775760

Mannay, D., Staples, E., Hallett, S., Roberts, L., Rees A., Evans, R., & Andrews, D. (2019) Enabling talk and reframing messages: working creatively with care experienced children and young people to recount and re-represent their everyday experiences, Child Care in Practice, 25:1, 51-63, DOI: 10.1080/13575279.2018.1521375

Mansour, N.B.; Rejaibi, S.; Mahfoudh, A.S.; Youssef, S.B.; Romdhane, H.B.; Schmidt, M.; Ward, K.D.; Maziak, W.; Asfar, T. (2023). Adapting Waterpipe-Specific Pictorial Health Warning Labels to the Tunisian Context Using a Mixed Method Approach. *PLoS ONE 18*, e0279014.

Marshalsey, L. and Sclater, M. (2019). Arts-Based Educational Research: The Challenges of Social Media and Video-Based Research Methods in Communication Design Education. *International Journal of Art & Design Education*, 38(3), pp.723–739. doi:https://doi.org/10.1111/jade.12252.

Martikainen, J., & Hakokõngäs, E. (2022). Drawing as a method of researching social representations. Qualitative Research, 23(4), 981-999. https://doi.org/10.1177/14687941211065165

Mbulo, L.; Ogbonna, N.; Olarewaju, I.; Musa, E.; Salandy, S.; Ramanandraibe, N.; Palipudi, K. (2016). Preventing Tobacco Epidemic in LMICs with Low Tobacco Use — Using Nigeria GATS to Review WHO MPOWER Tobacco Indicators and Prevention Strategies. *Preventive Medicine91*, S9–S15. https://doi.org/10.1016/j.ypmed.2016.04.005

McCarthy, W.J., Mistry, R., Lu, Y., Patel, M., Zheng, H. and Dietsch, B. (2009). Density of Tobacco Retailers Near Schools: Effects on Tobacco Use Among Students. *American Journal of Public Health*, [online] 99(11), pp.2006–2013. https://doi.org/10.2105/AJPH.2008.145128

McDaniel, P. A.; Cadman, B.; Malone, R. E. (2018). African Media Coverage of Tobacco Industry Corporate Social Responsibility Initiatives. *Global Public Health*, *13* (2), 129–143. https://doi.org/10.1080/17441692.2016.1149203.

McIntyre, A. (2008). Participatory Action Research. Available at: https://dx.doi.org/10.4135/9781483385679

McKercher, K. A. (2020) Beyond Sticky Notes. Doing Co-design For Real: Mindsets, Methods, and Movements. Sydney, Australia: Beyond Sticky Notes

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An Ecological Perspective on Health Promotion Programs. *Health Education Quarterly*, *15*(4), 351–377. https://doi.org/10.1177/109019818801500401

Mechelen V. M. (2016). Designing technologies for and with children: A toolkit to prepare and conduct co-design activities and analyse the outcomes. Available at: https://www.researchgate.net/publication/351072584

Méndez, D.; Alshanqeety, O.; Warner, K. E. (2013) 'The potential impact of smoking control policies on future global smoking trends' *Tobacco Control 22*, 46–51. https://doi.org/10.1136/tobaccocontrol-2011.

Mensah, E.O. (2023). Husband is a Priority: Gender Roles, Patriarchy and the Naming of Female Children in Nigeria. *Gender Issues*, 40. doi:https://doi.org/10.1007/s12147-022-09303-z.

Merriam, S. B., & Tisdell, E. J. (2016). Qualitative Research: A Guide to Design and Implementation (4th ed.). San Francisco, CA: Jossey Bass.

Meyer, A. (1991) Visual data in organizational research, Organization Science, 2(2): 218–36.

Montazeri, A. and Mcewen, J. (1997). 'Effective communication : perception of two anti-smoking advertisements', *Patient Education and Counseling*, 3991(96), pp. 29–35.

Mostafa, A., Mohammed, H. T., Hussein, R. S., Hussein, W. M., Elhabiby, M., Safwat, W.; Labib, S. and Fotouh, A. A. (2018). Do Pictorial Health Warnings on Waterpipe Tobacco Packs Matter? Recall Effectiveness among Egyptian Waterpipe Smokers & Nonsmokers. *PLoS ONE*, *13* (12). https://doi.org/10.1371/journal.pone.0208590.

Munthali, G.N.C., Wu, X.-L., Rizwan, M., Daru, G.R. and Shi, Y. (2021). Assessment of Tobacco Control Policy Instruments, Status and Effectiveness in Africa: A Systematic Literature Review. *Risk Management and Healthcare Policy*, Volume 14, pp.2913–2927. https://doi.org/10.2147/rmhp.s311551

National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF). (2018) Multiple Indicator Cluster Survey 2016-17, Survey Findings Report. Abuja, Nigeria: National Bureau of Statistics and United Nations Children's Fund. (Accessed October 21, 2021) https://www.unicef.org/nigeria/media/1406/file/Nigeria-MICS-2016-17.pdf.pdf

National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF). (2022). Multiple Indicator Cluster Survey 2021, Survey Findings Report. Abuja, Nigeria: National Bureau

of Statistics and United Nations Children's Fund. (Accessed January 2, 2024) https://www.unicef.org/nigeria/media/6316/file/2021%20MICS%20full%20report%20.pdf

National Cancer Institute. (2008). The Role of the Media in Promoting and Reducing Tobacco Use. Tobacco Control Monograph No. 19. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute. NIH Pub. No. 07-6242

National Institute for Health and Care Research (2021). *Briefing notes for researchers - public involvement in NHS, health and social care research*. Available at: https://www.nihr.ac.uk/briefing-notes-researchers-public-involvement-nhs-health-and-social-care-research

Ngo, A., Cheng, K. W., Chaloupka, F. J. and Shang, C. (2017). The Effect of MPOWER Scores on Cigarette Smoking Prevalence and Consumption. *Preventive Medicine*, *105*, S10–S14. https://doi.org/10.1016/j.ypmed.2017.05.006.

Niederdeppe, J., Avery, R., Byrne, S. and Siam, T. (2016) 'Variations in state use of antitobacco message themes predict youth smoking prevalence in the USA, 1999–2005', *Tobacco Control*, 25(1), pp. 101–107. Available at: https://doi.org/10.1136/tobaccocontrol-2014-051836.

Nigeria Tobacco Control Regulations (2019). Available at: https://assets.tobaccocontrollaws.org/uploads/legislation/Nigeria/Nigeria-2019-Regulations-native.pdf (Accessed 12, January 2021)

Njie GJ, Kirksey Jones C, Jacques N, Adetokun A, Ross J, Owens A, et al. (2023). Changes in Tobacco Product Use Among Students Aged 13 to 15 Years in 34 Countries, Global Youth Tobacco Survey, 2012 -2020. Preventing Chronic Disease 20:220410. DOI: http://dx.doi.org/10.5888/pcd20.220410

Noar, S. M. A 10-Year Retrospective of Research in Health Mass Media Campaigns: Where Do We Go from Here? (2006), *Journal of Health Communication 11* (1), 21–42. https://doi.org/10.1080/10810730500461059.

Noar, S.M., Kelley, D.E., Boynton, M.H., Morgan, J.C., Hall, M.G., Mendel, J.R., Ribisl, K.M. and Brewer, N.T. (2018). Identifying principles for effective messages about chemicals in cigarette smoke. *Preventive Medicine*, 106, pp.31–37. doi:https://doi.org/10.1016/j.ypmed.2017.09.005.

Noble, H. and Smith, J. (2015). Issues of Validity and Reliability in Qualitative Research. *Evidence Based Nursing* 18(2), pp.34–35. https://doi.org/10.1136/eb-2015-102054

Odukoya, O. O., Odeyemi K.A., Oyeyemi A. S. and Upadhyay R. P. (2014). 'The effect of a short anti-smoking awareness programme on the knowledge, attitude and practice of cigarette smoking among secondary school students in Lagos state, Nigeria.' *The Nigerian postgraduate medical journal* 21(2), pp. 128–135.

Odukoya, O.; Faseru, B.; Uguru, N.; Jamda, M.; Onigbogi, O.; James, O.; Leischow, S. and Ayo-Yusuf, O. (2020). Text Messaging Promoting Physician-Led Brief Intervention Tobacco Cessation:

A before-and-after Study among Physicians in Three Tertiary Hospitals in Nigeria. *Substance Abuse 41* (2), 186–190. https://doi.org/10.1080/08897077.2018.1526844.

Okello, G., Jones, C., Bonareri, M., Ndegwa, S.N., Mcharo, C., Kengo, J., Kinyua, K., Dubeck, M.M., Halliday, K.E., Jukes, M.C., Molyneux, S. and Brooker, S.J. (2013). Challenges for consent and community engagement in the conduct of cluster randomized trial among school children in low income settings: experiences from Kenya. *Trials*, 14(1), p.142 https://doi.org/10.1186/1745-6215-14-142

Okunna, N. (2018) 'Assessment of the use of different forms of tobacco products among Nigerian adults: Implications for tobacco control policy', *Tobacco Prevention & Cessation*, 4(April), pp. 1–11. doi: 10.18332/tpc/87126.

Oladepo, O., Oluwasanu, M. and Abiona, O. (2018) 'Analysis of tobacco control policies in Nigeria: Historical development and application of multi-sectoral action', *BMC Public Health*, 18(Suppl 1). doi: 10.1186/s12889-018-5831-9.

Olajubu, O.A., Olowokere, E.E. and Naanyu, V. (2025). Barriers to Utilization of Sexual and Reproductive Health Services among Young People in Nigeria: A Qualitative Exploration Using the Socioecological Model. *Global Qualitative Nursing Research*, 12. doi:https://doi.org/10.1177/23333936241310186.

Olaore, A. Y. and Drolet, J. (2016) 'Indigenous Knowledge, Beliefs, and Cultural Practices for Children and Families in Nigeria', *Journal of Ethnic & Cultural Diversity in Social Work*, 26(3), pp. 254–270. doi: 10.1080/15313204.2016.1241973.

Olatunji, A., Issah, M., Noah, Y., Muhammed, A.Y. and Sulaiman, A.-R. (2015) 'Personal name as a reality of everyday life: naming dynamics in select African societies', *Journal of Pan African Studies*, 8(3), 72

Olumide, A.O., Shmueli, A., Adebayo, E.S. *et al.* (2022) 'Economic costs of cigarette smoking among adolescents in Nigeria. *Journal of Public Health* 1701–1712. https://doi.org/10.1007/s10389-021-01644-5

Omaduvie, U. and Adisa, A. (2015) 'Exposure to Secondhand Smoke in the Home and Public areas among Adolescents in Abuja, Nigeria: Tobacco control implications', *Tobacco Prevention & Cessation*, 1(December), pp. 2–7. doi: 10.18332/tpc/61178.

Onoh, I., Dairo, M.D., Balogun, M.S, and Fawole, O. (2023). Prevalence and Predictors of Tobacco Use Among Adolescents in Ibadan, Nigeria. *Preventing Chronic Disease* doi:https://doi.org/10.5888/pcd20.220234.

Onwuegbuzie, A. J., Dickinson, W. B., Leech, N. L., & Zoran, A. G. (2009). A Qualitative Framework for Collecting and Analyzing Data in Focus Group Research. International Journal of Qualitative Methods, 8(3), 1-21. https://doi.org/10.1177/160940690900800301

Orlando, M., Tucker, J.S., Ellickson, P.L. and Klein, D.J. (2005). Concurrent Use of Alcohol and Cigarettes from Adolescence to Young Adulthood: An Examination of Developmental Trajectories and Outcomes. *Substance Use & Misuse*, 40(8), pp.1051–1069. doi:https://doi.org/10.1081/ja-200030789.

Osuh, M. E., Fagbule, O. F. and Olatunji, Y. D. (2020) 'Prevalence and predictors of susceptibility and future intention to smoke cigarettes among school-going adolescents in Ibadan, Nigeria', *Pan African Medical Journal*, 37(230), pp. 1–15. doi: 10.11604/pamj.2020.37.230.24174.

Osungbade, K. O. and Oshiname, F. O. (2008) 'Determinants of cigarette smoking among senior secondary school students in a rural community of southwest Nigeria.' *Nigerian journal of medicine : journal of the National Association of Resident Doctors of Nigeria*, 17(1), pp. 40–44. doi: 10.4314/njm.v17i1.37353.

Owoeye, O. B. and Olaniyan, O. (2015) 'Economic Cost of Tobacco-Related Diseases in Nigeria : a Study of three Hospitals in Ibadan, Southwest Nigeria', *Munich Personal RePEc Archive (MPRA)*, (88054), pp. 1–29. Available at: https://mpra.ub.uni-muenchen.de/88054/%0D

Owoseye A. Nigeria Appoints Timi Dakolo, Mr Eazi As Anti-Tobacco Lead Campaigners. *Premium Times*, 15 June 2017. Available at: http://allafrica.com/stories/201706150097.html Accessed December 18, 2024.

Owusu, D., Quinn, M., Wang, K.-S., Aibangbee, J. and Mamudu, H.M. (2017). Intentions to quit tobacco smoking in 14 low- and middle-income countries based on the transtheoretical model. *Drug and Alcohol Dependence*, 178, pp.425–429. doi:https://doi.org/10.1016/j.drugalcdep.2017.05.033

Oyapero, A.; Erinoso, O. A.; Osoba, M. E. and Osibogun, A. (2021). Exposure to Anti-Tobacco Messaging and Quit Attempts among Adolescent and Young Adult in Lagos, Nigeria: *The West African medical journal*, 38(11), pp.1058–1064.

Oyewole, B. K., Animasahun, V. J. and Chapman, H. J. (2018) 'Tobacco use in Nigerian youth: A systematic review', *PLoS ONE*, 13(5), pp. 1–13. https://doi.org/10.1371/journal.pone.0196362

Ozer, E.J., Abraczinskas, M., Duarte, C., Mathur, R., Ballard, P.J., Gibbs, L., Olivas, E.T., Bewa, M.J. and Afifi, R. (2020). Youth Participatory Approaches and Health Equity: Conceptualization and Integrative Review. *American Journal of Community Psychology*, 66(3-4). https://doi.org/10.1002/ajcp.12451

Payne, G. and Payne, J. (2011). Key Concepts in Social Research. Key Concepts in Social Research. SAGE Publications Ltd. https://doi.org/10.4135/9781849209397

Percy-Smith, B., Thomas, N. P., O'Kane, C., Imoh, A. T. (2023) A Handbook of Children and Young People's Participation: Conversations for Transformational Change. London: Routledge

Perl, R., Murukutla, N., Occleston, J., Bayly, M., Lien, M., Wakefield, M. and Mullin, S. (2015). Responses to antismoking radio and television advertisements among adult smokers and non-smokers across Africa: message-testing results from Senegal, Nigeria and Kenya. *Tobacco Control*, 24(6), pp.601–608 https://doi.org/10.1136/tobaccocontrol-2014-051682

Perry, C.L., Stigler, M.H., Arora, M. and Reddy, K.S. (2009). Preventing Tobacco Use Among Young People in India: Project MYTRI. *American Journal of Public Health*, 99(5), pp.899–906. doi: https://doi.org/10.2105/ajph.2008.145433

Peters, S., Guccione, L., Francis, J., Best, S., Tavender, E., Curran, J., Davies, K., Rowe, S., Palmer, V.J. and Klaic, M. (2024). Evaluation of research co-design in health: a systematic overview of reviews and development of a framework. *Implementation Science*, 19(1). https://doi.org/10.1186/s13012-024-01394-4

Philip, K.E., Bu, F., Polkey, M.I., Brown, J., Steptoe, A., Hopkinson, N.S. and Fancourt, D. (2022). Relationship of Smoking with Current and Future Social Isolation and loneliness: 12-year follow-up of Older Adults in England. *The Lancet Regional Health - Europe*, 14(14), p.100302. https://doi.org/10.1016/j.lanepe.2021.100302.

Poku, B. A., Caress, A.-L., & Kirk, S. (2019). The Opportunities and Challenges of Using Photo-Elicitation in Child-Centered Constructivist Grounded Theory Research. International Journal of Qualitative Methods, 18. https://doi.org/10.1177/1609406919851627

Pollock, D., Peters, M.D.J., Khalil, H., McInerney, P., Alexander, L., Tricco, A.C., Evans, C., de Moraes, É.B., Godfrey, C.M., Pieper, D., Saran, A., Stern, C. and Munn, Z. (2023). Recommendations for the extraction, analysis, and presentation of results in scoping reviews. *JBI Evidence Synthesis*, 21(3), pp.520–532. https://doi.org/10.11124/jbies-22-00123.

Pound, P., Langford, R. and Campbell, R. (2016). What do young people think about their school-based sex and relationship education? A qualitative synthesis of young people's views and experiences. *BMJ Open*, 6(9), p.e011329. doi: https://doi.org/10.1136/bmjopen-2016-011329

PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews) Checklist. Available online: Appendix 11.2 PRISMA ScR Extension Fillable Checklist - JBI Manual for Evidence Synthesis - JBI Global Wiki (refined.site) (Accessed July 15, 2023)

Prochaska, J.J. and Sallis, J.F. (2004). A Randomized Controlled Trial of Single Versus Multiple Health Behavior Change: Promoting Physical Activity and Nutrition Among Adolescents. *Health Psychology*, 23(3), pp.314–318. doi:https://doi.org/10.1037/0278-6133.23.3.314.

Rani, M., Thamarangsi, T. and Agarwal, N. (2017). Youth tobacco use in South-East Asia: Implications for tobacco epidemic and options for its control in the region. *Indian Journal of Public Health*, 61(5), p.12. doi:https://doi.org/10.4103/ijph.ijph_241_17.

Rath, J.M., Romberg, A.R., Perks, S.N., Edwards, D., Vallone, D.M. and Hair, E.C. (2021). Identifying message themes to prevent e-cigarette use among youth and young adults. *Preventive Medicine*, 150, p.106683. doi:https://doi.org/10.1016/j.ypmed.2021.106683.

Read, J., Fitton, D., Cowan, B., Beale, R., Guo, Y. and Horton, M. (2011). Understanding and designing cool technologies for teenagers. *CHI '11 Extended Abstracts on Human Factors in Computing Systems*. https://doi.org/10.1145/1979742.1979809

Reason, P., & Torbert, W. (2001). The action turn: Toward a transformational social science. *Concepts and Transformation International Journal of Action Research and Organizational Renewal*, *6*(1), 1–37. https://doi.org/10.1075/cat.6.1.02rea

Reggev, N.; Sharoni, R.; Maril, A. (2018). Distinctiveness Benefits Novelty (and Not Familiarity), but Only Up to a Limit: The Prior Knowledge Perspective. *Cognitive Science*, *42* (1), 103–128. https://doi.org/10.1111/cogs.12498.

Reitsma, M.B., Kendrick, P.J., Ababneh, E., Abbafati, C., Abbasi-Kangevari, M., Abdoli, A., Abedi, A., Abhilash, E.S., Abila, D.B., Aboyans, V., Abu-Rmeileh, N.M., Adebayo, O.M., Advani, S.M., Aghaali, M., Ahinkorah, B.O., Ahmad, S., Ahmadi, K., Ahmed, H., Aji, B. and Akunna, C.J. (2021). Spatial, temporal, and demographic patterns in prevalence of smoking tobacco use and attributable disease burden in 204 countries and territories, 1990–2019: a systematic analysis from the Global Burden of Disease Study 2019. *The Lancet*, 397(10292), pp.2337–2360. https://doi.org/10.1016/S0140-6736(21)01169-7

Schiavo, R. (2014). Health Communication: From Theory to Practice, 2nd ed.; Jossey-Bass A Wiley Brand: San Francisco, United States, pp. 26-28

Riker, C.A., Butler, K.M., Ricks, J.M., Record, R.A., Begley, K., Anderson, D.G. and Hahn, E.J. (2015). Creating Effective Media Messaging for Rural Smoke-free Policy. *Public Health Nursing*, 32(6), pp.613–624. doi:https://doi.org/10.1111/phn.12188.

Rimer, B. K., & Glanz, K. (2005). Theory at a glance: A guide for health promotion practice. Bethesda, MD: US Department of Health and Human Services, National Institutes of Health, National Cancer Institute. Available at: https://cancercontrol.cancer.gov/sites/default/files/2020-06/theory.pdf

Rinnert, G., Campana, K., Martens, M., Mupinga, D., Caniglia, J., Malgwi, G., Kamiyama, T., and Filippi, A. (2020) Synergy through Making: Co-designing with Educational Stakeholders in Northeastern Nigeria, in Boess, S., Cheung, M. and Cain, R. (eds.), *Synergy - DRS International Conference 2020*, 11-14 August, Held online. https://doi.org/10.21606/drs.2020.273

Roditis, M.L., Dineva, A., Smith, A., Walker, M., Delahanty, J., D'Iorio, E. and Holtz, K.D. (2019). Reactions to electronic nicotine delivery system (ENDS) prevention messages: results from qualitative research used to inform FDA's first youth ENDS prevention campaign. *Tobacco Control*, 969(2,399) https://tobaccocontrol.bmj.com/content/29/5/510

Ritchie, J., Lewis, J., McNaughton Nicholls, C. and Ormston, R. (2014) *Qualitative Research Practice: a Guide for Social Science Students and Researchers.* London: SAGE. https://uk.sagepub.com/en-gb/eur/qualitative-research-practice/book237434

Salaudeen, A. G., Musa, O. I., Akande, T. M., Bolarinwa, O. A. (2013). Effects of health education on cigarette smoking habits of young adults in tertiary institutions in a northern Nigerian state', *Health Science Journal*, 7(1), pp. 54–67.

Saleem, A., Kausar, H. and Deeba, F. (2021). Social Constructivism: A New Paradigm in Teaching and Learning Environment. *Perennial Journal of History*, *2*(2), 403-421. https://doi.org/10.52700/pjh.v2i2.86

Sanders, E.B.-N. and Stappers, P.J. (2008). Co-creation and the new landscapes of design. *CoDesign* 4(1), pp.5–18. https://doi.org/10.1080/15710880701875068

Sanders, E.B.-N. . and Stappers, P.J. (2014). Probes, toolkits and prototypes: three approaches to making in codesigning. *CoDesign*, 10 (1), pp.5–14. https://doi.org/10.1080/15710882.2014.888183

Sangalang, A., Volinsky, A.C., Liu, J., Yang, Q., Lee, S.J., Gibson, L.A. and Hornik, R.C. (2019). Identifying Potential Campaign Themes to Prevent Youth Initiation of E-Cigarettes. *American Journal of Preventive Medicine*, 56(2), pp.S65–S75. doi:https://doi.org/10.1016/j.amepre.2018.07.039.

Satpathy, N., Jena, P.K. and Epari, V. (2022). Gender dimensions of youth vulnerability toward access to cigarettes in South-East Asia: Evidence from global youth tobacco survey. *Frontiers in Public Health*, 10. https://doi.org/10.3389/fpubh.2022.976440

Savedoff, W. and Alwang, A. (2015). "The Single Best Health Policy in the World: Tobacco Taxes." CGD Policy Paper 062. Washington DC: Center for Global Development. http://www.cgdev.org/publication/single-best-health-policy-world-tobacco-taxes

Sendra, P. (2023). The Ethics of co-design. *Journal of Urban Design*, 29(1), pp.1–19. https://doi.org/10.1080/13574809.2023.2171856.

Shier, H. (2001). Pathways to participation: openings, Opportunities and Obligations. *Children & Society*, 15(2), pp.107–117. https://doi.org/10.1002/chi.617

Simonsen, J., and Robertson, T. (2013) Routledge International Handbook of Participatory Design. 1st Edition, Routledge.

Singh, A., Owusu-Dabo, E., Britton, J., Munafo, M.R. and Jones, L.L. (2014). 'Pictures Don't Lie, Seeing Is Believing': Exploring Attitudes to the Introduction of Pictorial Warnings on Cigarette Packs in Ghana. *Nicotine & Tobacco Research*, 16(12), pp.1613–1619. doi:https://doi.org/10.1093/ntr/ntu127.

Siziya, S., Rudatsikira, E. and Muula, A.S. (2008). Antismoking messages and current cigarette smoking status in Somaliland: results from the Global Youth Tobacco Survey 2004. *Conflict and Health*, 2(1). doi:https://doi.org/10.1186/1752-1505-2-6.

Slattery, P., Saeri, A.K. and Bragge, P. (2020). Research co-design in health: a rapid overview of reviews. *Health Research Policy and Systems*, 18(1). https://doi.org/10.1186/s12961-020-0528-9

Sly, D.F., Hopkins, S. R., Trapido, E. and Ray, S. (2001). 'Influence of a counter advertising media campaign on initiation of smoking: The Florida "truth" campaign', *American Journal of Public Health*, 91(2), pp. 233–238. https://doi.org/10.2105/AJPH.91.2.233

Society For Health Communication- About Health Communication (2017). Available online: https://www.societyforhealthcommunication.org/health-communication (Accessed 10 September 2021)

Spinuzzi, C. (2005). *The Methodology of Participatory Design*. Applied Research: Technical Communication Volume 52, Number 2

Stahl, N.A. and King, J.R. (2020). Expanding Approaches for Research: Understanding and Using Trustworthiness in Qualitative Research. *Journal of Developmental Education*, 44(1), pp.26–28. https://www.jstor.org/stable/45381095

Stalgaitis, C.A., Dang, S., Warner, C., Biggers, S., Jackson, L. and Jordan, J.W. (2025). Youth Tobacco Control in the Digital Age: Impact of South Carolina's Youth Tobacco Education and Vaping Cessation Social Media Programs. *International Journal of Environmental Research and Public Health*, 22(2), p.269. https://doi.org/10.3390/ijerph22020269

Stead, M., Angus, K., Langley, T., Katikireddi, S.V., Hinds, K., Hilton, S., Lewis, S., Thomas, J., Campbell, M., Young, B. and Bauld, L. (2019). Mass media to communicate public health messages in six health topic areas: a systematic review and other reviews of the evidence. *Public Health Research*, 7(8), pp.1–206. doi:https://doi.org/10.3310/phr07080.

Stehlik, T, Carter, J., Price D., & Comber, B. (2020). Hanging out in the city of tomorrow: a participatory approach to researching the importance of music and the arts in the lifeworlds of young people, Pastoral Care in Education, 38:3, 273-289, DOI: 10.1080/02643944.2020.1788128

STOP: A Global Tobacco Industry Watchdog 2020. Trading "Philanthropy" for Favors: Tobacco Industry CSR During COVID-19. University of Bath, Department of Health. Available at: https://exposetobacco.org/news/ban-ti-csr/ (Accessed 16 August 2021)

Stringer, E. (2014). Action Research (4th edition). Thousand Oaks, CA: Sage.

Suteerangkul, P., Lagampan, S., Kalampakorn, S. and Auemaneekul, N. (2021). The effects of community participation program on smoke- free homes in a suburban community of Thailand. *Tobacco Induced Diseases*, 19, pp.1–8. doi:https://doi.org/10.18332/tid/133876.

Tattan-Birch, H., Brown, J., Shahab, L., Beard, E. and Jackson, S.E. (2024). Trends in vaping and smoking following the rise of disposable e-cigarettes: a repeat cross-sectional study in England between 2016 and 2023. *The Lancet regional health. Europe*, 42(100924), pp.100924–100924. doi:https://doi.org/10.1016/j.lanepe.2024.100924.

Teufel-Shone, N.I., Siyuja, T., Watahomigie, H.J. and Irwin, S. (2006). Community-Based Participatory Research: Conducting a Formative Assessment of Factors that Influence Youth Wellness in the Hualapai Community. *American Journal of Public Health*, 96(9), pp.1623–1628. doi:https://doi.org/10.2105/ajph.2004.054254.

Thabrew, H., Fleming, T., Hetrick, S. and Merry, S. (2018). Co-design of eHealth Interventions With Children and Young People. *Frontiers in Psychiatry* 18; 9:481 https://doi.org/10.3389/fpsyt.2018.00481

Tisdall, K., Davis, J. M., & Gallagher, M. (2008). *Researching with Children and Young People*: Research Design, Methods and Analysis. SAGE Publications.

Tricco, A.C., Lillie, E., Zarin, W., O'Brien, K.K., Colquhoun, H., Levac, D., Moher, D., Peters, M.D.J., Horsley, T., Weeks, L., Hempel, S., Akl, E.A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M.G., Garritty, C. and Lewin, S. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of Internal Medicine*, 169(7), pp.467–473. doi:https://doi.org/10.7326/M18-0850.

Trunk Širca, N. and Shapiro, A. (2007). Action research and constructivism: two sides of the same coin? Or, one side?', *International Journal of Management in Education*, Vol. 1, Nos. 1/2, pp.100–107

U.S. Department of Health and Human Services (2012). Preventing Tobacco Use Among Youth and Young Adults. Atlanta, U.S. Department of Health and Human Services, Centre for Disease Control and Prevention and Health Promotion, Office on Smoking and Health. Available at: https://www.cdc.gov/tobacco/data_statistics/sgr/2012/index.htm (Accessed 19 February 2021)

Uchendu, O.; Adebiyi, A. O.; Adeyera, O. (2018). Willingness of Tobacco Retailers in Oyo State to Participate in Tobacco Control Programmes. *Tobacco Prevention and Cessation*, *4* (January). https://doi.org/10.18332/tpc/81858.

Udokanma, E. E., Ogamba, I. and Ilo, C. (2021) 'A health policy analysis of the implementation of the National Tobacco Control Act in Nigeria', *Health Policy and Planning*, 00(0), pp. 1–9. doi: 10.1093/heapol/czaa175.

Union for International Cancer Control (2024) *Tobacco control*. Available at: https://www.uicc.org/what-we-do/thematic-areas/tobacco-control (Accessed 20 December 2021).

United Nation Children's Fund (UNICEF) (1989). *Convention on the Rights of the Child*. Available at: https://www.unicef.org/child-rights-convention (Accessed 20 December 2024).

United Nation Children's Fund (UNICEF) (2019). Communication for Development (C4D) Advancing positive social and behaviour change. Available at: https://www.unicef.org/media/73836/file/Global-annual-results-report-2019-communication-for-development-accessible.pdf (Accessed 20 December 2024).

United Nation Children's Fund (UNICEF): The United Nations Convention on the Rights of the Child (1989). Available at: https://www.unicef.org.uk/rights-respecting-schools/wp-content/uploads/sites/4/2017/01/UNCRC-in-full.pdf (Accessed 12 December 2024)

United Nations Children's Fund- Generation 2025 and Beyond: The Critical importance of understanding demographic trends for children of the 21st century (2012). Available at: https://data.unicef.org/wp-content/uploads/2015/12/Generation_2025_and_beyond_Nov2012_42.pdf (Accessed 6 October 2022)

United Nations Population Fund (UNFPA). Demographic Dividend Atlas for Africa: Tracking the Potential for a Demographic Dividend (2017). Available at: https://www.unfpa.org/sites/default/files/resource-pdf/UNFPA_African_Atlas_KW_RS_SZ.pdf (Accessed 17 October 2023).

Van Hierden, Y., Dietrich, T., & Rundle-Thiele, S. (2021). Designing an eHealth Well-Being Program: A Participatory Design Approach. *International Journal of Environmental Research and Public Health*, *18*(14), 7250. https://doi.org/10.3390/ijerph18147250

Vanguard News (2020). Scholarship: Greensprings Students Win Conrad Challenge Scholarship Again. Available at: https://www.vanguardngr.com/2020/10/scholarship-greensprings-students-win-conrad-challenge-scholarship-again/ (Accessed August 31, 2021)

Vanguard News (2021a). FMOH, Censors Board, Police, CSOs, others discuss smoke-free Nollywood at CAPPA's summit. Available at: https://www.vanguardngr.com/2021/06/fmoh-censors-board-police-csos-others-discuss-smoke-free-nollywood-at-cappas-summit/ (Accessed August 31, 2021)

Vanguard News (2021b). Anti-tobacco groups write NBC over smoking in Big Brother Naija show. Available at: https://www.vanguardngr.com/2021/08/anti-tobacco-groups-write-nbc-over-smoking-in-big-brother-naija-show/ (Accessed August 31, 2021)

Vanguard News 2(020). NTCA takes anti-smoking advocacy to entertainment industry regulators. Available at: https://www.vanguardngr.com/2020/09/ntca-takes-anti-smoking-advocacy-to-entertainment-industry-regulators/ (Accessed August 31, 2021)

Varghese, J. and Muntode Gharde, P. (2023). A Comprehensive Review on the Impacts of Smoking on the Health of an Individual. *Cureus*, 15(10). https://doi.org/10.7759/cureus.46532

Vaughn, L. M., & Jacquez, F. (2020). Participatory Research Methods – Choice Points in the Research Process. Journal of Participatory Research Methods, 1(1). https://doi.org/10.35844/001c.13244

Vega, W. A. and Gil, A. G. (2005). 'Revisiting drug progression: Long-range effects of early tobacco use', *Addiction*, 100(9), pp. 1358–1369. doi: 10.1111/j.1360-0443.2005.01141.x.

Vigna-Taglianti, F., Mehanović, E., Alesina, M., Damjanović, L., Ibanga, A., Pwajok, J., Prichard, G., van der Kreeft, P. and Virk, H.K. (2021). Effects of the 'Unplugged' school-based substance use prevention program in Nigeria: A cluster randomized controlled trial. *Drug and Alcohol Dependence*, 228, p.108966. doi:https://doi.org/10.1016/j.drugalcdep.2021.108966.

Wakefield, M.; Bayly, M.; Durkin, S.; Cotter, T.; Mullin, S.; Warne, C. (2013). Smokers' Responses to Television Advertisements about the Serious Harms of Tobacco Use: Pre-Testing Results from 10 Low- to Middle-Income Countries. *Tobacco Control 22* (1), 24–31. https://doi.org/10.1136/tobaccocontrol-2011-050171.

Wall, K., Higgins, S., Hall, E., & Gascoine, L. (2017). What does learning look like? Using cartoon story boards to investigate student perceptions (from 4 to 15) of learning something new. In M. Emme, & A. Kirova (Eds.), Good question : arts-based approaches to collaborative research with children and youth (211-227). The Canadian Society for Education through Art

Ward, J. and Shortt, H. (2018). Drawing. The SAGE Handbook of Qualitative Business and Management Research Methods: Methods and Challenges, pp.262–281. https://doi.org/10.4135/9781526430236.n16

Ward, M.E., De Brún, A., Beirne, D., Conway, C., Cunningham, U., English, A., Fitzsimons, J., Furlong, E., Kane, Y., Kelly, A., McDonnell, S., McGinley, S., Monaghan, B., Myler, A., Nolan, E., O'Donovan, R., O'Shea, M., Shuhaiber, A. and McAuliffe, E. (2018). Using Co-Design to Develop a Collective Leadership Intervention for Healthcare Teams to Improve Safety Culture. *International journal of environmental research and public health*, 15(6), p.1182. https://doi.org/10.3390/ijerph15061182

Warren, M. R., Calderón, J., Kupscznk, L. A., Squires, G., & Su, C. (2018). Is Collaborative, Community-Engaged Scholarship More Rigorous Than Traditional Scholarship? On Advocacy, Bias, and Social Science Research. *Urban Education*, *53*(4), 445–472. https://doi.org/10.1177/0042085918763511

Wetton, N. and McWhirter, J. (1998) Images and curriculum development in health education. In Prosser, J. (ed) Image-based research: a source for qualitative researchers, 263-83. London: Routledge

Whale, K., Beasant, L., Wright, A.J., Yardley, L., Wallace, L.M., Moody, L. and Joinson, C. (2021). A Smartphone App for Supporting the Self-management of Daytime Urinary Incontinence in Adolescents: Development and Formative Evaluation Study of URApp. *JMIR Pediatrics and Parenting*, 4(4), p.e26212. https://doi.org/10.2196/26212

Wilson, O., Daxenberger, L., Dieudonne, L., Eustace, J., Hanard, A., Krishnamurthi, A., Quigley, P., and Vergou, A. (2020). A rapid evidence review of young people's involvement in health research. London: Wellcome. Available at: https://cms.wellcome.org/sites/default/files/2021-02/a-rapid-evidence-review-of-young-peoples-involvement-in-health-research.pdf

Winters, K.C., Leitten, W., Wagner, E. and O' Leary Tevyaw, T. (2007). Use of Brief Interventions for Drug Abusing Teenagers Within a Middle and High School Setting. *Journal of School Health*, 77(4), pp.196–206. doi:https://doi.org/10.1111/j.1746-1561.2007.00191.x.

Wisdom, J.P., Juma, P., Mwagomba, B., Ndinda, C., Mapa-Tassou, C., Assah, F., Nkhata, M., Mohamed, S.F., Oladimeji, O., Oladunni, O., Oluwasanu, M., Sanni, S., Mbanya, J.-C. and Kyobutungi, C. (2018). Influence of the WHO framework convention on tobacco control on tobacco legislation and policies in sub-Saharan Africa. *BMC Public Health*, 18(S1). doi:https://doi.org/10.1186/s12889-018-5827-5.

Wiseman, V., Conteh, L. and Matovu, F. (2005). Using diaries to collect data in resource-poor settings: questions on design and implementation. Health Policy and Planning 20(6), pp.394–404 https://doi.org/10.1093/heapol/czi042

World Economic Forum (2020), Africa's population will triple by the end of the century even as the rest of the world shrinks. Available at: https://www.weforum.org/agenda/2020/07/africa-population-triple (Accessed 22 August 2021)

World Health Organization - Best buys and other recommended interventions for the prevention and control of non-communicable diseases: Tackling NCDs Best Buys (2017). Available at: https://apps.who.int/iris/handle/10665/259232 (Accessed 10 June 2021).

World Health Organization (2023). The Global Tobacco Epidemic (p71). Available at: https://www.who.int/teams/health-promotion/tobacco-control/global-tobacco-report-2023 (Accessed 15 August 2023)

World Health Organization (2015). Adolescent health and development. Available at https://www.who.int/maternal_child_adolescent/topics/adolescence/development/en/. (Accessed 29 October 2019)

World Health Organization (2018). *Tobacco Control*, *WHO Regional Office for Africa*. Available at: https://www.afro.who.int/health-topics/tobacco-control (Accessed 13 November 2023)

World Health Organization (2021). Assessing and supporting adolescents' capacity for autonomous decision-making in healthcare settings. Available online: https://iris.who.int/bitstream/handle/10665/350208/9789240039568-eng.pdf?sequence=1 (Accessed 12 December 2024)

World Health Organization (2022) *Targets of Sustainable Development Goal 3*, *www.who.int*. Available at: https://www.who.int/europe/about-us/our-work/sustainable-development-goals/targets-of-sustainable-development-goal-3 (Accessed 13 November 2023)

World Health Organization (2023). Non-communicable Diseases. Available at https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases (Accessed 19 August 2023)

World Health Organization (2023). Tobacco: Key Facts. Available at https://www.who.int/news-room/fact-sheets/detail/tobacco (Accessed 17 October 2023).

World Health Organization (2024). *Adolescent Health*. Available at: https://www.who.int/southeastasia/health-topics/adolescent-health (Accessed 17 October 2023)

World Health Organization (2024). New WHO/Europe Fact sheets reveal mixed progress on tobacco control in the European Region. Available at: https://www.who.int/europe/news/item/02-12-2024-new-who-europe-fact-sheets-reveal-mixed-progress-on-tobacco-control-in-the-european-region (Accessed 20 February 2024)

World Health Organization (2024). WHO Youth Engagement. Available at: https://www.who.int/initiatives/who-youth-engagement#:~:text=Engaging%20young%20people%20in%20global,get%20involved%20in%20various%20ways (Accessed 20 February 2024)

World Health Organization Atlas of African Health Statistics 2022- Health Situation Analysis of the African Region. Available at: https://www.afro.who.int/publications/atlas-african-health-statistics-2022-health-situation-analysis-who-african-region-0 (Accessed 15 June 2023).

World Health Organization *Framework Convention on Tobacco Control overview* (2021). Available at: https://fctc.who.int/convention (Accessed 10 January 2021)

World Health Organization Framework Convention on Tobacco Control – Article 12 Technical Document (2013) Available at: https://fctc.who.int/who-fctc/reporting/reporting-instrument/video-step-by-step-instructions-for-the-completion-of-core-questionnaire-of-the-reporting-instrument/article-12 (Accessed 10 January 2021)

World Health Organization Framework Convention on Tobacco Control Reports. Available at: https://fctc.who.int/convention/progress/global-progress-reports (Accessed January 2022)

World Health Organization Framework Convention on Tobacco Control Reporting Instrument (2022) Available at: https://fctc.who.int/convention/reporting/reporting-instrument (Accessed January 2022)

World Health Organization Global Health Observatory (2019) Available at: https://www.who.int/data/gho (Accessed 16 June 2023)

World Health Organization Regional Office for Africa (2015). The WHO Framework Convention on Tobacco Control: 10 years of implementation in the African Region. Available at:

https://www.afro.who.int/sites/default/files/2017-06/who-fctc-10-year_report_web.pdf (Accessed 16 September 2021)

World Health Organization UHC Index of service coverage (2021). Available at: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/uhc-index-of-service-coverage (Accessed 25 January 2025)

World Health Organization World health statistics (2024). Tables of health statistics by country and area, WHO region and globally. Available at: https://www.who.int/data/gho/whs-annex/ (Accessed 25 January 2025)

World Health Organization & WHO Tobacco Free Initiative (2008). World No Tobacco Day 2008: tobacco-free youth. World Health Organization. https://iris.who.int/handle/10665/43919 (Accessed 29 October 2019)

World Health Organization. WHO report on the global tobacco epidemic, 2023: protect people from tobacco smoke. Available online https://www.who.int/publications/i/item/9789240077164 (Accessed October 5, 2023)

Xu, X., Alexander, R.L., Simpson, S.A., Goates, S., Nonnemaker, J.M., Davis, K.C. and McAfee, T. (2015). A Cost-Effectiveness Analysis of the First Federally Funded Antismoking Campaign. *American Journal of Preventive Medicine*, 48(3), pp.318–325. https://doi.org/10.1016/j.amepre.2014.10.011

Young, L., & Barrett, H. (2001). Ethics and Participation: Reflections on Research with Street Children, Ethics, Place & Environment, 4:2, 130-134, DOI: 10.1080/01629777300000151

Zucker, D., Hopkins, R. S., Sly, D. F., Urich, J., Kershaw, J. M., & Solari, S. (2000). Florida's "truth" Campaign: A Counter-Marketing, Anti-Tobacco Media Campaign. *Journal of Public Health Management and Practice*, *6*(3), 1–6. https://doi.org/10.1097/00124784-200006030-00003

APPENDICES

Appendix 1: Screenshot from Twitter (X) - First Place Award by Tobacco Free Nigeria

Appendix 2: Screenshot from Twitter (X) - WHO African Region Award for WNTD 2018

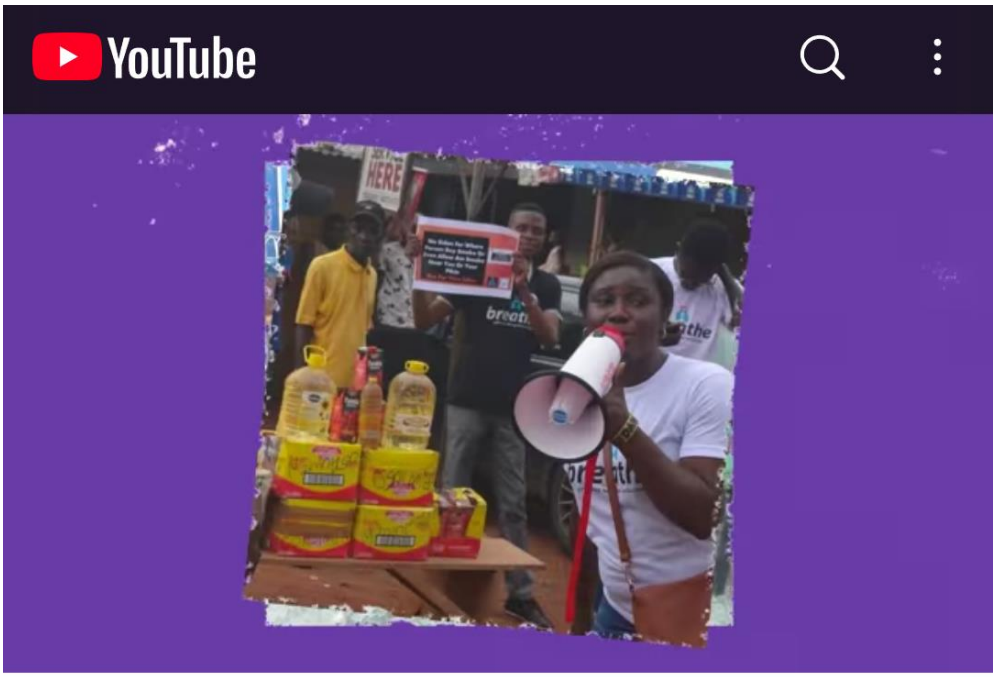
WHO Nigeria
@WHONigeria

@IsaacFAdewole presenting the #WorldNoTobaccoDay2018 award to Mrs. Charity Aienobe-Asekharen on behalf @WHO DG @DrTedros & @WHOAFRO RD @MoetiTshidi for the @WHO African Region award presented to those who have made notable contribution towards #tobacco control.

7:25 PM · 04 Jun 18

28 Reposts **2** Quotes **44** Likes

Appendix 3: Screenshot from YouTube - Documentary Feature by Campaign for Tobacco Free Kids



Appendix 4: Screenshot of the Scoping Review Publication

International Journal of Environmental Research and Public Health

Submit to this Journal

Review for this Journal

Propose a Special Issue

Article Menu

Academic Editor

Carla Berg

Subscribe SciFeed

Recommended Articles

Author Biographies

Related Info Links

Order Article Reprints

Open Access Review

A Scoping Review of Tobacco Control Health Communication in Africa: Moving towards Involving Young People

by Charity Aienobe-Asekharen, Emma Norris and Wendy Martin *

Department of Health Sciences, Brunel University London, London UB8 3PH, UK

* Author to whom correspondence should be addressed.

Int. J. Environ. Res. Public Health **2024**, *21*(3), 259; https://doi.org/10.3390/ijerph21030259

Submission received: 28 November 2023 / Revised: 3 February 2024 / Accepted: 7 February 2024 / Published: 23 February 2024

(This article belongs to the Special Issue Tobacco Control: Challenges, Policies and Interventions)

Download Browse Figures Versions Notes

Abstract

Health communication has been highlighted as a cost-effective preventive intervention in Africa, where the prevalence of tobacco use is still relatively low compared to other World Health Organization (WHO) regions. This scoping review aimed to examine tobacco control health communication interventions in Africa. The review was guided by the PRISMA-ScR checklist. Data was extracted from 20 peer-reviewed papers. WHO Global Health

Altmetric Share Help Cite Discuss in Endorse 2 Comment

View PDF

Appendix 5: WHO Global Health Observatory Anti-tobacco Mass Media Campaigns For 54 African Countries 2010 - 2020

Country	World Bank Income Group	Number of Campaigns Recorded (2010 – 2020)	Best (3) National Campaign with ≥7 CTS (Plus TV/Radio)	Better (2) National Campaign with ≤7 CTS (No TV/Radio)	Good (1) National Campaign with ≤4 CTS	Not Good (0) No National Campaign ≥ 3 Weeks	Not Good (0) No Data Reported	Overall Review Score
1. Algeria	Low & Middle Income	6	0	0	0	2014 (0) 2012 (0) 2010 (0)	2020 (0) 2018 (0) 2016 (0)	0
2. Angola	Low & Middle Income	6	2020 (3)	0	0	2016 (0) 2014 (0) 2012 (0) 2010 (0)	2018 (0)	3
3. Benin	Low & Middle Income	6	0	2014 (2) 2012 (2)	0	2020 (0) 2018 (0) 2010 (0)	2016 (0)	4
4. Botswana	Low & Middle Income	6	0	2020 (2) 2010 (2)	2018 (1)	2016 (0) 2014 (0)	2012 (0)	5
5. Burkina Faso	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	0
6. Burundi	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2014 (0) 2012 (0) 2010 (0)	2016 (0)	0

7. Cameroun	Low & Middle Income	6	2016 (3) 2014 (3)	0	0	2020 (0) 2012 (0) 2010 (0)	2018 (0)	6
8. Cape Verde (Also called Cabo Verde)	Low & Middle Income	6	2020 (3)	2018 (2)	0	2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	5
9. Central African Republic	Low & Middle Income	6	0	2014 (2)	0	2020 (0) 2018 (0) 2010 (0)	2016 (0) 2012 (0)	2
10. Chad	Low & Middle Income	6	0	2018 (2)	0	2020 (0) 2014 (0) 2012 (0) 2010 (0)	2016 (0)	2
11. Comoros	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2010 (0)	2012 (0)	0
12. Congo	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	0
13. Cote d' Ivoire	**Low & Middle Income**	**6**	**0**	**2020 (2) 2018 (2) 2016 (2) 2014 (2)**	**2010 (1)**	2012 (0)	**0**	**9**
14. Democratic Republic of Congo	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0)	2010 (0) 2014 (0)	0

						2012 (0)		
15. Djibouti	Low & Middle Income	6	0	2014 (2)	0	2020 (0) 2018 (0) 2012 (0) 2010 (0)	2016 (0)	2
16. Egypt	Low & Middle Income	**6**	**2012 (3)** **2010 (3)**	**0**	**2020 (1)**	2018 (0) 2016 (0) 2014 (0)	**0**	**7**
17. Equatorial Guinea	Low & Middle Income	6	0	0	0	2020 (0) 2014 (0) 2012 (0) 2010 (0)	2018 (0) 2016 (0)	0
18. Eritrea	Low & Middle Income	6	0	2010 (2)	0	2020 (0) 2018 (0) 2014 (0) 2012 (0)	2016 (0)	2
19. Eswatini (Also called Swaziland)	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2012 (0) 2010 (0)	2016 (0) 2014 (0)	0
20. Ethiopia	Low & Middle Income	**6**	**2020 (3)**	**2018 (2)** **2016 (2)**	**2012 (1)**	2014 (0) 2010 (0)	**0**	**8**
21. Gabon	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2012 (0)	2010 (0)	0
22. Gambia	Low & Middle Income	6	0	2020 (2) 2018 (2) 2014 (2)	0	2016 (0) 2012 (0) 2010 (0)	0	6
23. Ghana	**Low & Middle Income**	**6**	**2020 (3)** **2014 (3)** **2012 (3)**	**2018 (2)**	**0**	2016 (0) 2010 (0)	**0**	**11**

24. Guinea	Low & Middle Income	6	0	2010 (2)	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2012 (0)	0	2
25. Guinea-Bissau	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2012 (0) 2010 (0)	2014 (0)	0
26. Kenya	Low & Middle Income	6	2016 (3)	0	0	2020 (0) 2018 (0) 2014 (0) 2012 (0) 2010 (0)	0	3
27. Lesotho	Low & Middle Income	6	0	2018 (2)	0	2020 (0) 2014 (0) 2012 (0) 2010 (0)	2016 (0)	2
28. Liberia	Low & Middle Income	6	2012 (3)	2020 (2)	0	2018 (0) 2014 (0) 2010 (0)	2016 (0)	5
29. Libya	Low & Middle Income	6	2014 (3)	0	0	2020 (0) 2018 (0) 2016 (0) 2012 (0) 2010 (0)	0	3
30. Madagascar	Low & Middle Income	6	2012 (3) 2010 (3)	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0)	0	6
31. Malawi	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2014 (0) 2012 (0) 2010 (0)	2016 (0)	0

32. Mali	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	0
33. Mauritania	Low & Middle Income	6	0	0	0	2020 (0) 2018 0) 2014 (0) 2012 (0)	2016 (0) 2010 (0)	0
34. Mauritius	**Low & Middle Income**	**6**	**2016 (3) 2012 (3)**	**2014 (2)**	**0**	2020 (0) 2018 (0) 2010 (0)	**0**	**8**
35. Morocco	**Low & Middle Income**	**6**	**2020 (3) 2016 (3) 2010 (3)**	**2018 (2)**	**0**	2014 (0) 2012 (0)	**0**	**11**
36. Mozambique	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	0
37. Namibia	Low & Middle Income	6	2020 (3)	2018 (2)	0	2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	5
38. Niger	Low & Middle Income	6	2010 (3)	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0)	2012 (0)	3
39. Nigeria	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2012 (0) 2010 (0)	2016 (0) 2014 (0)	0

40. Rwanda	**Low & Middle Income**	**6**	**2020 (3) 2010 (3)**	**2012 (2)**	**2018 (1)**	2016 (0) 2014 (0)	**0**	**9**
41. Sao Tome and Principe	Low & Middle Income	6	2012 (3)	0	0	2020 (0) 2018 (0) 2010 (0)	2016 (0) 2014 (0)	3
42. Senegal	Low & Middle Income	6	2018 (3) 2014 (3)	0	0	2020 (0) 2016 (0) 2012 (0) 2010 (0)	0	6
43. Seychelles	**High Income**	**6**	**2018 (3) 2016 (3) 2012 (3)**	**2020 (2)**	**2010 (1)**	2014 (0)	**0**	**12**
44. Sierra Leone	Low & Middle Income	6	0	2016 (2)	0	2020 (0) 2018 (0) 2014 (0) 2012 (0) 2010 (0)	0	2
45. Somalia	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2012 (0)	2014 (0) 2010 (0)	0
46. South Africa	Low & Middle Income	6	0	2020 (2)	0	2018 (0) 2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	2
47. South Sudan	Low & Middle Income	6	0	2010 (2)	0	2020 (0) 2018 (0) 2016 (0)	2014 (0) 2012 (0)	2
48. Sudan	Low & Middle Income	6	0	2014 (2) 2010 (2)	0	2020 (0) 2018 (0) 2016 (0) 2012 (0)	0	4

49. Togo	**Low & Middle Income**	**6**	**2020 (3) 2018 (3) 2010 (3)**	**2014 (2)**	**0**	2016 (0) 2012 (0)	**0**	**11**
50. Tunisia	**Low & Middle Income**	**6**	**2020 (3) 2014 (3) 2012 (3)**	**2016 (2) 2010 (2)**	**2018 (1)**	0	**0**	**14**
51. Uganda	Low & Middle Income	6	0	2020 (2) 2018 (2)	2014 (1)	2016 (0) 2012 (0) 2010 (0)	0	5
52. United Republic of Tanzania	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2014 (0) 2010 (0)	2016 (0) 2012 (0)	0
53. Zambia	Low & Middle Income	6	2010 (3)	0	2020 (1)	2018 (0) 2016 (0) 2014 (0) 2012 (0)	0	4
54. Zimbabwe	Low & Middle Income	6	0	0	0	2020 (0) 2018 (0) 2016 (0) 2014 (0) 2012 (0) 2010 (0)	0	0

Appendix 6: Global Progress Report on the Implementation of the WHO FCTC 2010 – 2021 (Article 12: African Parties)

Number of Parties (Countries) that applied Article 12	Year of WHO FCTC Report	Average % Implementation Rate of Article 12	% of Parties Focused on Health Risk of Tobacco Consumption	% of Parties Targeting Children	Stakeholders Involved in implementation of Programmes (Degree of involvement NOT recorded here, check WHO FCTC reports)	African Country Mentioned in Year of Report
114	2010	Not mentioned	80	Not given (4 out of 5)	Public agencies and nongovernmental organizations not affiliated with the tobacco industry	None
115	2012	70	100	98	Public agencies and nongovernmental organizations, private organizations, religious and faith-based organizations; academic and higher education institutions; community and scientific groups, and professional colleges; as well as international organizations and bodies (p.34)	Ghana Training of Healthcare Professionals by the Ministry of Health (p.33) Djibouti Unavailable resources for impactful campaigns (p.35)
125	2014	70	100	99	Public agencies and NGOs, private organizations, religious and faith-based organizations; academic, higher education institutions and hospitals; community and scientific groups, and professional colleges; municipalities; the media; and international organizations, including WHO.	Senegal Launch of first ever anti-tobacco media campaign called “Sponge” (p.34)

					(p.35)	
119	2016	90	100	99	Public agencies, and non-governmental organizations involved in development and implementation of intersectoral programmes and strategies for tobacco control. Private organizations, academic, higher educational institutions; community and scientific groups; professional colleges; municipalities; the media; and international organizations, including WHO (p.35/36)	Seychelles launch or culmination of national programme planned to align with World No Tobacco Day (p.34)
162	2018	99	99	99	Public agencies, NGOs involved in the development and implementation of intersectoral programmes and strategies for tobacco control. Academic and higher education institutions; community and scientific groups; hospitals and research institutes; professional colleges; police and military; the media; and international organizations, including WHO. (p.40/41)	Chad New Campaign on Oral cancer (p.37) Training young peer educators in smoking prevention (p.40) Nigeria Launched campaign called “#ClearTheAir” to support new smoke-free legislation (p.39)
166	2021	92	99	96	Public agencies, NGOs, Academic and higher education institutions,	Senegal

					community and scientific groups, professional colleges, police and the military, the media, and international organizations including WHO were involved in the development and implementation of intersectoral programmes and strategies for tobacco control (p.52)	Continued or further developed previously established campaigns/activities (p.47) World No Tobacco Day (WNTD) Campaign (p.47) Mauritius Continued or further developed previously established campaigns/activities (p.47)

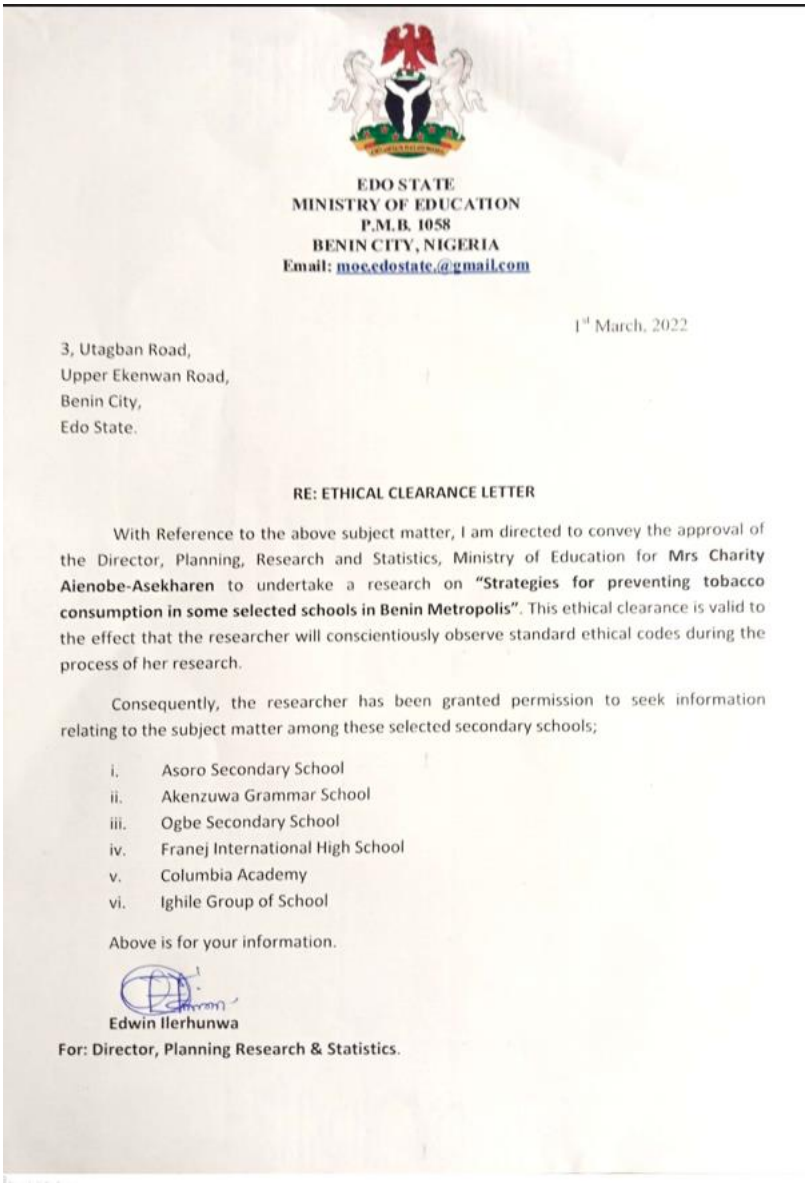
This table shows the % of WHO FCTC parties between 2010 and 2021 who focused on Health Risk of Tobacco Consumption, % of parties who reported Targeting Children, and the Stakeholders reportedly involved in implementation of tobacco control programmes.

Appendix 7: PRISMA-ScR CHECKLIST ITEM for the Scoping Review

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	37
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	37
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	38
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	40
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	41
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	42
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	3, 5
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	41, 43
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	41 - 43
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	45

Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	46
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	46
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	43
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	51 - 56
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	57
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	57 - 60
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	60 - 65
Limitations	20	Discuss the limitations of the scoping review process.	66
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	67
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	N/A

Appendix 8: Ethical Approval from the Ministry of Education, Edo State



EDO STATE
MINISTRY OF EDUCATION
P.M.B. 1058
BENIN CITY, NIGERIA
Email: moe.edostate.@gmail.com

1st March, 2022

3, Utagban Road,
Upper Ekenwan Road,
Benin City,
Edo State.

RE: ETHICAL CLEARANCE LETTER

With Reference to the above subject matter, I am directed to convey the approval of the Director, Planning, Research and Statistics, Ministry of Education for **Mrs Charity Aienobe-Asekharen** to undertake a research on **"Strategies for preventing tobacco consumption in some selected schools in Benin Metropolis"**. This ethical clearance is valid to the effect that the researcher will conscientiously observe standard ethical codes during the process of her research.

Consequently, the researcher has been granted permission to seek information relating to the subject matter among these selected secondary schools;

i. Asoro Secondary School
ii. Akenzuwa Grammar School
iii. Ogbe Secondary School
iv. Franej International High School
v. Columbia Academy
vi. Ighile Group of School

Above is for your information.

Edwin Ilerhunwa
For: Director, Planning Research & Statistics.

Appendix 9: Participant Information Sheet - A Five Page Version

PARTICIPANT INFORMATION SHEET

Study title: Determining and developing effective health communication strategies and tools for tobacco use prevention among in-school young people in Southern Nigeria

Invitation Paragraph

I am Ajenobe-Asekharen Charity, a Health Promoter and a Doctoral Researcher at Brunel University. You are specially invited to participate in this study for students in secondary schools. "Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part or not. Thank you for reading this."

What is the purpose of the study?

The purpose of this study is to determine and develop effective health communication strategies and materials for tobacco smoking prevention for young people by young people. Despite the availability of certain structures (policy, taxation, prevention of tobacco advertising) that tend to prevent tobacco use among young people; the tobacco control effort in Nigeria still lacks a strong health communication infrastructure which has been shown to be a key component in successful tobacco control programs. The study findings will aid in providing a practical template for approaching tobacco control health communication programmes and intervention for young people as well as inform health promotion practice and policy in Nigeria. This is particularly important to facilitate inclusion of young people in decision making as Nigeria will be a key contributor to Africa's projected population growth. Hence, this study is relevant for the tobacco control efforts in Nigeria as it would help to build tobacco control health communication plans by young people for young people.

Why have I been invited to participate?

You have been invited to participate because as a young person, your opinion and experience is very important and will aid in developing effective health promotion programs for young people in Nigeria. The findings from this study would be of enormous benefit in health promotion and advocacy for young people as it would help to establish the voice of young people like you in health-related issues in Nigeria.

Do I have to take part?

You are under no obligation to participate in this study. You are free to choose whether you want to participate or not. If you decide to participate in the study, you will be invited to take part in at least four workshops and later on given a questionnaire to fill. You can decide to withdraw any information you provide during the workshop until December 15, 2022 before the information is mixed with the answers from other team members

Appendix 10: Participant Information Sheet - A One Page Version

Study title: Determining and developing effective health communication strategies and tools for tobacco use prevention among in-school young people in Southern Nigeria

What We will be doing as the Co-design Team in the Workshops

The stages involved in co-design are:
Discovery (Workshop 1)
We will discuss the causes of tobacco smoking using activities like creating a Problem Tree

Idea generation (Workshop 2)
We will discuss ideas for tobacco use prevention using materials e.g photographs and posters

Ideation - Development and evaluation of prototypes (Workshop 3)
We will work together to develop and design the ideas and see which will work best

Feedback- design evaluation (Workshop 4)
We will look at our designs and decide on how it should look, what we should add or remove

Appendix 11: Consent Form for Students

CONSENT FORM

Brunel University London

Determining and developing effective health communication strategies and tools for tobacco use prevention among in-school young people in Southern Nigeria
Charity A. Ajienobe-Asekharen

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT BETWEEN 17/05/2022 AND 28/04/2023

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? (via email/phone for electronic surveys/face to face)	☐	☐
Have you received satisfactory answers to all your questions? (via email/phone for electronic surveys/face to face)	☐	☐
Who have you spoken to about the study?		
Do you understand that you/your school 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 rights?**	☐	☐
• **You can withdraw your data any time up to 15/12/2022**	☐	☐
I agree to my interview being video and audio recorded with photographs taken	☐	☐
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 12: Consent Form for Parents/Guardians

CONSENT FORM

Determining and developing effective health communication strategies and tools for tobacco use prevention among in-school young people in Southern Nigeria
Charity A. Ajienobe-Asekharen

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT BETWEEN 17/05/2022 AND 28/04/2023

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? (via email/phone for electronic surveys/face to face)	☐	☐
Have you received satisfactory answers to all your questions? (via email/phone for electronic surveys/face to face)	☐	☐
Who have you spoken to about the study?		
Do you understand that your Child/Ward/School will not be referred to by name in any report concerning this study?	☐	☐
Do you understand that your Child/Ward:		
• **Free to withdraw from this study at any time**	☐	☐
• **Don't have to give any reason for withdrawing**	☐	☐
• **Choosing not to participate or withdrawing will not affect access to services**	☐	☐
• **Can withdraw data any time up to 15/12/2022**	☐	☐
I agree for my Child/Ward's interview being audio and video recorded with photographs taken	☐	☐
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 Child/Ward's anonymised data can be stored and shared with other researchers for use in future projects.	☐	☐
I agree for my Child/Ward to take part in this study.	☐	☐

Signature of Parent/Guardian:	
Print name:	Date:

Appendix 13: Ethical Approval From Brunel University Research Ethics Committee

University Research Ethics Committee
Brunel University London
Kingston Lane
Uxbridge
UB8 3PH
United Kingdom

www.brunel.ac.uk

8 January 2024

LETTER OF APPROVAL

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT UNTIL 31/08/2024

Applicant (s): Mrs Charity Agbonisan Aienobe-Asekharen

Project Title: Determining and developing effective health communication strategies and tools for tobacco use prevention among in-school adolescents in Southern Nigeria

Reference: 32745-A-Jan/2024- 49184-3

Dear Mrs Charity Agbonisan Aienobe-Asekharen

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:

- **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 any conditions that may appear above.
- 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.

Professor Christina Victor

Chair of the University Research Ethics Committee

Brunel University London

Appendix 14: Ethical Approval From the Ministry of Health, Edo State

MINISTRY OF HEALTH

P.M.B. 1113
Benin City, Edo State,
Nigeria.

Tel.....
Fax.....
E-Mail.....

Our Ref: Ha.737/5/T[1]/016
Your Ref:

19th April, 2022

Attention: Charity Aienobe-Asekharen
3, Utagban Road,
Upper Ekenwan Road,
Benin City.

RE: REQUEST FOR STUDY APPROVAL

I am directed to acknowledge the receipt of your request on the above stated matter. Sequel to the review of your proposal and recommendations by the state ethical clearance committee, you are hereby given approval by the Honourable Commissioner to conduct the research on **"Determining and Developing Effective Health Communication Strategies and Tools for Tobacco Use Prevention among In-School Young People in Nigeria".**

You are to ensure confidentiality of the respondents and make available to the library of the Ministry of Health, a copy of your research findings.

Accept the assurances of the highest regard of the Honourable Commissioner.

Dr. Iraoya M. Howiks
(Director, Health Planning, Research and Statistics)
For: Honourable Commissioner.

Appendix 15: Group Discussion Guide

Interview Guide

1. How did you choose **a name for your team**?
2. Any **particular reason** for the name? What's the connection?
3. What were **the reasons you selected this cause of smoking** for young people?
4. Are the **causes general** for young people or **young people you know**?
5. How can what we have **co-designed be incorporated** within your **school setting/environment or neighbourhood**?
6. Can we apply it? If it can't be applied, why did you go for what can't be applied in your school
7. What makes these **messages specific** for young Nigerians in **Edo State**?
8. Are these messages focused on young people **already smoking or those who are yet to start**?
9. The messages be more **visual or text based**? **What's the way to go for Young People?**
10. If you were to rate influence for smoking which would be the most influential: **intrapersonal** (depression, stress, fun, mental health) **interpersonal relationships/ social environment/beliefs (F&F)**, (social/group belonging- big boys/big girls, method to relieve stress? What ways available for a young Nigerian?), environment/community (school, neighbourhood, church) **Cultural environment** (Any cultural factors that support smoking for young people?)
11. How did you manage to come up with these even with your class schedule?
12. How do you **feel about what you have accomplished**?
13. Is there something you think we **should have done differently**?
14. **Has this whole process aided your growth? How**?
15. Anything else you want to add

Appendix 16: Adapted Version of WHO GYTS Questionnaire

Determining and developing effective health communication strategies and tools for tobacco use prevention among in-school young people aged 12 -19 in Nigeria

Dear Participant, **Serial Number** _____

I am Ajenobe-Asekharen Charity a Health Promoter and a Doctoral Researcher at Brunel University. Thank you for deciding to participate in this survey.

Your name or any form of identity will not be asked in this questionnaire. Please answer the questions as honestly as you can. Please know that **you are not required to write your name on the questionnaire**. Kindly feel free to express your opinion and be rest assured that your answers would be kept confidential. **Please answer the questions as it relates to you without input from others.**

Your honest and sincere response to the following questions would be highly appreciated as it would enable me to correctly understand your thoughts and opinions. The overall findings from this survey would be shared and discussed with you further if you choose to also participate in the workshop. The date and venue of the workshop would be communicated after this survey.

In the workshop, you (if you choose to participate), me and other participants would work together to come up with strategies that would be effective for communicating tobacco use prevention among young people. The findings from this study would be of enormous benefit in the area of health promotion and advocacy for young people as it would help to establish the voice of young people like you in health related issues in Nigeria.

Please remember that there are no wrong or right answers to the questions. The correct answer is the answer you give that works specifically for you. No one would know the answers you give in this questionnaire so even during the workshop while we discuss the results from the questionnaire, we would still not know who gave the answers.

Thank You, Your opinion matters.

I Agree to participate ☐

I Disagree ☐

Please TICK, CIRCLE or SHADE your chosen response

INSTRUCTION: Please give appropriate answers to each question

1 Name of School _____

2 Class i JSS 1 ☐ ii JSS2 ☐ iii JSS3 ☐ iv SS1 ☐ v SS2 ☐ vi SS3 ☐

3 How old are you today (In years) _____

4 Gender 1 Male ☐ 2 Female ☐

5 Religion i Christian ☐ ii Islam ☐ iii Traditional ☐ iv Others (specify _____)

6 Ethnicity i Bini ☐ ii Esan ☐ iii Etsako ☐ iv Owan ☐ v Yoruba ☐ vi Igbo ☐ vii Hausa ☐ viii Others (specify _____)

7. During an average week, how much money do you have that you can spend on yourself, however you want?

a. I usually don't have any money to spend
b. Less than N250
c. N251- N400
d. N401 – N600
e. N601 – N800
f. N801 and above

8. How will you describe the area where you currently live?
i Urban
ii Semi Urban
iii Rural

9. Are there stores/shops/kiosks where they sell cigarettes or other types of tobacco products walking distance to your home?
i Yes
ii No

10. Have you ever been sent to buy cigarette or other types of tobacco products by an adult?

i Yes

ii No

11. Have you seen anyone smoking in public in the last 30 days?
i Yes

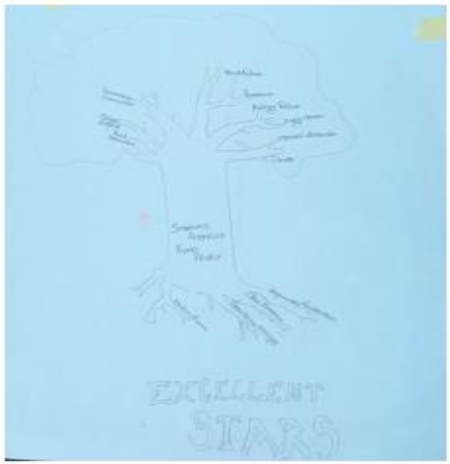
ii No

12 What do you think about smoking?
i I think it is Good

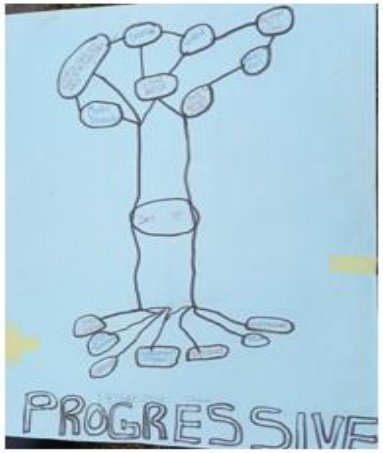
Appendix 17: Problem Trees from Seven Groups

Creative Scholars

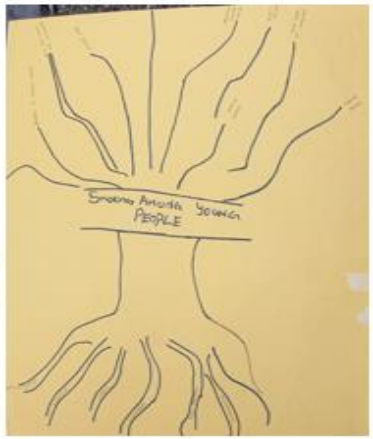
Excellent Stars



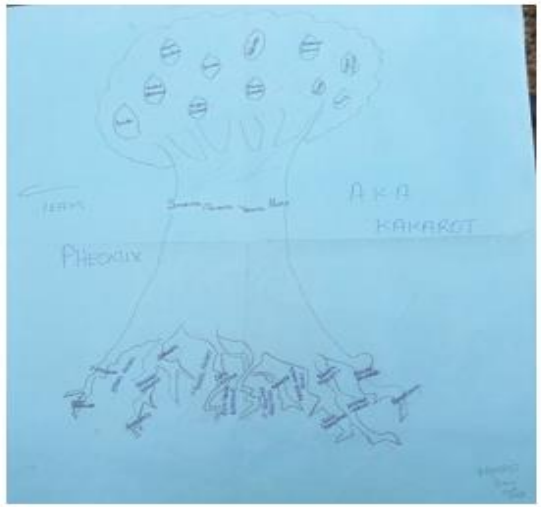
Progressive Team



Team TFT

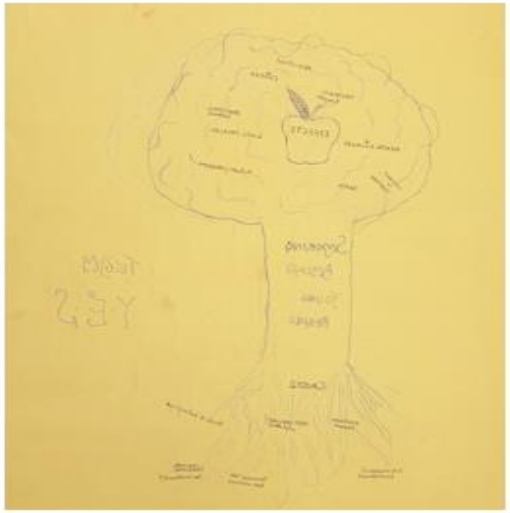


Team Phoenix aka Kakarot



Team E.P.I.C

Team Y.E.S



Appendix 18: *Workshop Transcript Addressing Misconception in Participants' Mind Maps*

Facilitator: *In the overall mind map, I saw words like lungs, damage, big boys, big girls and I understood why you put those words after I checked the stick notes attached to your mind map. But there are some few questions I want us to address, one of which is some persons were mixing the effects of what you popularly call igbo with the effects of smoking tobacco products. But it is also called cannabis or marijuana. The effects are similar, but they are not the same.*

When tobacco products are smoked the substance that is distributed into the blood stream is called Nicotine, while that of cannabis is called cannabinoids. I'm not sure I spelt it well.

So, the effects are similar, but they are not the same.

Facilitator writes on the flip chart in front of the hall.

How are they similar? The substances released when both are smoked can be more than 4000.

For tobacco, more than 70 causes cancer while for cannabis, more than 50 causes cancer. Tobacco smoking accelerates to lung cancer in people faster that cannabis. We are not saying cannabis is good. None is good. But this one (points to tobacco) is the oga kpatakpata of them all.

Chorus: *The Odogwu!*

All laughs

Facilitator: *So another thing I noticed people did, it is not wrong, but i want to correct it so you don't mix it up. In the chart in the questionnaire you filled, you saw different types of tobacco products right?*

Chorus: *Yes*

Facilitator: *There are two major types, what are they?*

Female participant from progressive team answers*: Smoked tobacco and smokeless*

Facilitator: *Thank you. Smoked and smokeless. It is not all types of tobacco that will bring smoke. There are some that will produce smoke while others will not. For instance, Snuff that people take, it does not bring smoke but it is tobacco.*

Another difference. For cannabis some people use the leaves to prepare food like beans because it can be medicinal

Chorus*: Yes, igbo beans*

Facilitator: *But when the dose is now too much it is no longer medicinal****.***

In short, in the olden days, the ancestors used leaves from tobacco plant and cannabis. They put it in pipes to smoke it so they can be transferred and begin to see things in the spirit world.

All laughs

Female participant in creative scholars: *Cannabis has medicinal properties*

Facilitator: *Yes, it does*

Male participant from Team excellent stars: *Ma, do they really see things in the spirit world?*

Facilitator: *I cannot say if they saw things, I was not there. But cannabis has the ability to make or cause someone to fall into for instance a trance. They start seeing things that are not there. It has that property. They start thinking things that are not in reality. And that's why you see some of them start misbehaving. And I noticed some of you wrote a lot about causes like insanity, and probably you were making reference to the effect of cannabis as individuals tend to behave abnormally.*

In the case of tobacco, it does not work exactly like that. But if the person already has a mental health issue, example of mental health issue is what?

Male participant in Progressive team: *Depression*

Facilitator: *Yes, depression. And you know, some persons may have a mental issue but they may not know. They may not know because they have not gone to the hospital and they have not been diagnosed.*

So smoking, using tobacco makes that mental issue worse. It worsens it. In short majority of persons who have depression and are also smokers are amongst the highest committing suicide.

Depression (a mental health issue) has the highest number of suicide cases and majority of those persons are smokers.

So, none of them (facilitator points to tobacco and cannabis in the flip chart) is safe. There is no safe level of smoking.

So please look at your word cloud, does it really represent what your team wanted to say. Check your mind map word cloud, does it really represent what you wanted to say or do you want to change something?

Groups begin to talk among themselves deliberating on the word cloud they have at hand.

Facilitator: *Remember I said this is a workshop and nothing is set in stone. If you decide you want to change something, you can. So, look at your mind maps and discuss****.***

Appendix 19: Screenshot of Short Video

Appendix 20: SONG BY TEAM Y.E.S (Young Erudite Scholars)

Verse 1: Here I am lying on my bed
Feeling so cold,
Wonder how I face my mama.
Doctor says my lungs are messed up,
U want to know how it all started
Chorus 1: Teach em
100 level, I meet this girl named Precious,
Precious she knew a girl called Vanessa
Vanessa knew Daniella
Daniella knew Cynthia and Susan
And Susan she knew who the drug lord was
First time in my apartment
They, like girl take a little sip
This supposed to make u see the whole world
From a sip
It turn to a bottle
From a bottle it turn to two
From two to five bottle
Later I was the queen to the whole club
Chorus 2: Of if I could turn back the hands of time
I know I could make better decision
Make better decision
Verse 2: Still go home after all this
Mama she still don't notice the changes
All the fame
Still to end up like this
Chorus 3: Messed up
All I smoke but I'm still empty
Chorus 2 again
I know X5
I could make better decisions
I know X4
I could make better decisions

Appendix 21: Pictures from stakeholder's workshop in Benin City, Nigeria

Appendix 22: Screenshot of Animation

Appendix 23: Poster Designs

TFT

TFT

TFT

Creative Scholars

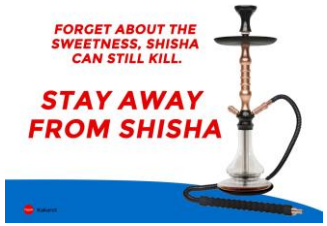
Creative Scholars

Team Y.E.S

Team Y.E.S

Team Y.E.S

Team E.P.I.C



Team Phoenix

Excellent Stars

Progressive Team