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Healthy body, healthy mind: Exploring the mental health implications of comprehensive sex education

Within this manuscript, we present the results of a thematic analysis of responses (N = 267) regarding perceived and anticipated mental health implications of accurate and comprehensive sex education. The superordinate theme of *psychological functioning and well-being* reflects participants' belief that sex education normalizes and destigmatizes diverse sexual experiences and can reduce fear, anxiety, and worry about sex. The superordinate theme of *knowledge* captures patterns in responses wherein participants reflected on the benefits of knowledge, including that it facilitates safety, confidence, improved decision-making skills, and provides awareness. Implications and applications for these themes are thoroughly discussed and outlined.

Keywords: sexuality; sex and relationship education; mental health; well-being

Introduction

Across the globe, comprehensive sex and relationship education remains a political, cultural, and educational dispute. This multifaceted dispute is highlighted within the United States of America (USA). For instance, of the 50 states, 29 hold sex education laws; of those, 19 mandate the information to be abstinence-only focused (known as abstinence-only education or AOE), and only 17 require the information to be medically accurate (Planned Parenthood Action Fund, 2022; The SIECUS State Profiles, 2023). Indicating that a mere 34% of states legislatively prioritize the medically correct delivery of sex education in schools. While the literature on AOE tends to focus on American samples, AOE is present in many contexts worldwide, including Uganda (Lweinger & Russell, 2021), Kenya and Rwanda (Gardner, 2011), Guatemala (Monzon et al., 2017), China (Aresu, 2009), and the UK (Abbott et al., 2015). Abstinence-only education (AOE) is sex education that instructs and encourages the individual to delay sexual intimacy until marriage, and information about tools and techniques to control pregnancy and the transmission of STDs/STIs is limited and/or biased to emphasize

failures and risk (Leung et al., 2019). On the other hand, comprehensive education is defined by the United Nations Educational Scientific and Cultural Organization (2018) as an age-appropriate curriculum aimed at conducting formal lessons that address the psychological, biological, and social aspects of human sexuality. The overarching goals are to provide scientifically accurate and non-judgmental information (including a complete overview of contraceptives and family planning options), to help students form healthy relationships with their own bodies and individual identities, and to help students recognize how their behaviors impact the mental health and well-being of others (Browes, 2015; Hess, 2011). Furthermore, comprehensive education programs are typically designed to reflect sex and gender diversity; for example, including same-sex couples and people with trans, non-binary, and gender-expansive identities when highlighting examples of healthy relationships (Chavula, Zulu, & Hurtig, 2022; Goldfarb & Lieberman, 2021). Though it should be noted these are guidelines for the development of comprehensive sex education curricula, the true implementation of these curricula varies from region to region as the material included is shaped by cultural norms and practices, local legislative policies, and the actions of relevant local councils, independent school districts, and school boards (The SIECUS State Profiles, 2023; Leung et al., 2019).

Voters and politicians likely support and promote the AOE framework in schools due to a number of factors, including political values (e.g., conservatism and right-wing authoritarianism predict sexually conservative values; Koleva et al., 2012), cultural values (e.g., cultural narratives about the sexualization of children are used to caution against sex education; Egan & Hawkes, 2008), and religious values (e.g., religious attendance and commitment predict signing and keeping abstinence pledges; Landor & Simons, 2014) that praise sexual purity and disparage casual and/or

premarital sex. As an example, research in the US finds that individuals who report being politically conservative (as opposed to moderates and liberals) are more likely to agree that AOE is effective and believe that instruction about contraception (e.g., condoms) will encourage young people to have sex (Bleakley et al., 2010). However, a review of empirical evidence would suggest when an individual is provided with comprehensive sexual health knowledge, they are more equipped to tackle challenges they may face when entering adulthood (e.g., social pressures to be intimate, ending unhealthy relationships, using condoms; Seiler-Ramadas et al., 2020) and experience delayed, rather than accelerated, sexual debut (Kohler et al., 2008). Thus, with the intent to challenge conservative and abstinence-focused sex education policies and practices, researchers outline the benefits associated with scientifically accurate and comprehensive sex education programs (Smith et al., 2011). By-and-large, research on the outcomes and impact of sexual education emphasizes physical health (including lower STI transmission rates, fewer unplanned pregnancies and births, and increased condom use; Goldfarb & Lieberman, 2021) while neglecting psychological and mental health outcomes. To address this gap, we employed a qualitative survey methodology to explore people's perceptions of the mental health benefits of comprehensive sex education.

A small but growing body of literature is beginning to explore the mental health and psychological well-being implications of comprehensive sex education. While some of this work continues to focus on behavioral change (e.g., comprehensive sex education is associated with decreased rates of bullying of sexual minority students, lower unplanned pregnancy rates, and less frequent drug/alcohol use before sex; Baams, Dubas, & van Aken, 2017; Snapp et al., 2015) some of this research highlights the mental health benefits of comprehensive sex education. It is likely that this recent,

increasing focus on psychological outcomes associated with comprehensive sex education reflects - at least in part - a growing appreciation for the relationship between psychological and emotional well-being and performance in school (Amholt et al., 2020) and health organizations (World Health Organization, 2021). As an example, Proulx and colleagues (2019) find in schools offering LGTBQ+ inclusive sex education, students report fewer suicidal thoughts, and bisexual students report fewer depressive symptoms compared to students in schools without LGBTQ+ inclusive curricula. Similarly, Tordoff and colleagues (2021) find exposure to non-comprehensive and exclusionary sex education can result in distress, feelings of isolation, alienation, shame, anger, and/or dysphoria among trans and gender non-binary young adults. A recent review (Goldfarb & Lieberman, 2021) found the majority of research exploring the outcomes associated with exposure to comprehensive and accurate sex education continues to focus on behavioral and physical health outcomes (e.g., frequency of and attitudes towards intimate partner violence, conflict management and communication skills, reduced rates of child sex abuse and increased intentions to report), with a minority of studies exploring factors relevant to mental health and well-being (e.g., sexual and gender identity discrimination, bullying, and harassment). We can conclude that the potential for comprehensive and accurate sex education to facilitate changes in mental health and psychological well-being has, hitherto, been under-explored.

Therefore, this study builds upon the limited literature where few researchers have thoroughly investigated the relationship between comprehensive sex education and mental health and well-being. More specifically, this qualitative analysis explores what themes arise when individuals reflect on potential mental health and well-being outcomes from accurate and comprehensive sex education. As such, we employ an

idiographic, bottom-up approach to investigate the perceived and anticipated mental health implications of comprehensive sex education.

Methods

Research Design

To address the research question - "what themes arise when individuals reflect on potential mental health and well-being outcomes from accurate and comprehensive sex education programs?" – a qualitative (i.e., short-answer) online survey methodology was employed. While this approach has many advantages (e.g., economical use of resources, including researcher's time and funding for participant reimbursement), it was selected as anonymity and privacy facilitates more honest and candid responses about topics participants may perceive as sensitive (Braun & Clarke, 2012).

Participants

Participants were recruited in three phases to ensure a sample large enough to address our research question and achieve data saturation (i.e., "the point in data collection and analysis when new information produces little or no change to the codebook"; Guest et al., 2006, pg 65). As the study aim is quite broad (i.e., to explore individuals' perceptions of the mental health outcomes of accurate and comprehensive sex education), our sample is diverse/heterogeneous with regard to their sex education experiences and history (see Figure 1), and each individual data point contains relatively little information (i.e., short-answer survey data), we anticipated that a large sample (approx. 250) was necessary to identify meaningful patterns in participant's ideas, experiences, and beliefs (see Malterud et al., 2016).

[Figure 1 Here]

Note. Demographics regarding participants' sexual education experience and history. N = 264.

The first phase of participants (N = 136) were recruited via social media adverts (e.g., Instagram and Twitter) as well as via Psychology survey webpages (e.g., Social Psychology Network and Psychological Research on the Net). Each participant had the option to enter their email for a chance to win 1 of 2 £25 Amazon vouchers. The second phase of participants were recruited through two platforms, Brunel University's Sona System (N = 39) and Prolific (N = 61). Undergraduate psychology students were reimbursed with course credits, and Prolific participants were reimbursed £5 for their time. The last batch of participants (N = 31) were again recruited via Brunel's Sona System and received course credits. These three phases resulted in a total sample size of 267 participants ranging between 18-74 years of age, with most respondents residing in Western Europe (64%) and North America (21%), between 18-24 years old (43%) and 25-34 years old (31%); our sample was mostly heterosexual (75%), 65% identified as female and 32% as male (7 identified as non-binary and 1 preferred not to say; see Table 1).

Measures

Participants were asked to read the participant information sheet (see Appendix A) and provide written consent before completing a 15-minute online survey via Qualtrics, which was approved by the College of Health, Medicine, and Life Sciences Ethics Committee at Brunel University London. Participants used a text entry essay box to answer the main research question (i.e., "Do you believe that medically accurate sex education and STD prevention interventions could improve a person's mental health and wellbeing? Explain your reasoning in a few short sentences."). Furthermore,

participants were asked to note what type of sex education they received: Comprehensive Sex Education, Abstinence-Focused Sex Education, or No Formal Sex Education (see Figure 1). They were also asked to note basic demographics (e.g., age group, ethnicity, religion, sexuality, and gender; see Appendix B, Table 1). Other quantitative and qualitative questions related to sexual behaviors, attitudes, and knowledge were included for separate analysis; thus, these data are not analyzed or reported here.

Qualitative analysis

Thematic analysis (Braune & Clarke, 2012) was used to identify patterns and overall narrative structure. To allow for unique themes to emerge from the data, we used an open and data-driven inductive thematic analysis approach (Fereday & Muir-Cochrance, 2006). Following Braune and Clarke (2012), thematic analysis was carried out in six phases. For the first phase, data familiarization, participants' responses were read in their entirety, and notes were taken to highlight extracts and ideas of interest. Specifically, our research question - what mental health benefits (if any) do people believe may result from comprehensive sex education and/or STI prevention interventions? - was used to guide this phase, and subsequent coding phases, of the analysis. The second phase involved detecting initial semantic codes – identifying and summarizing explicitly shared ideas, experiences, concepts, etc., related to the research question. The third phase involved identifying initial themes – the second level of abstraction, where conceptually similar codes across the entire dataset were clustered and collapsed into themes and subthemes. The first author completed these first three phases. Then, the first and second authors completed the fourth phase, reviewing and revising the themes. The authors reviewed the potential themes and overall thematic structure to determine if the themes accurately captured the data; which included

determining if extracts appropriately support each theme (e.g., is this idea repeated sufficiently across participants in our data set?), if each theme was homogeneous and coherent (e.g., should the theme be broken into multiple themes or subthemes?), etc. The first author then completed the fifth phase, naming and defining each theme. This involved reviewing the extracts supporting each theme and selecting a name and definition that best captured the meaning those extracts share. The second author reviewed these themes and subthemes to ensure they accurately captured the data. Finally, the first and second authors completed the sixth phase, generating the report.

Findings and Discussion

Overall, two superordinate and six subordinate themes were identified in the data set (see Table 2). These themes highlight the personal and relational benefits associated with comprehensive sex education. Most of our participants (N = 241) believed comprehensive sex education and/or STI prevention interventions would improve mental health and well-being (see Figure 2). They explained education would lower sexual stigma and shame, facilitate confident and empowered choice, reduce negative emotions (e.g., anxiety and worry), increase acceptance of diverse sexual behaviors, experiences, and identities, and create a general sense of sexual health awareness.

[Table 2 Here]

[Figure 2 Here]

Note. With respect to the research question, "Do you believe that medically accurate sex education and STD prevention interventions could improve a person's mental health and well-being?", researchers dummy coded each qualitative response to represent an explicit answer (Yes, No, or Unsure/Mix). This chart represents each dummy-coded answer.

Psychological functioning and well-being

This superordinate theme (N = 175) captures participants' belief that comprehensive sex education promotes better psychological functioning and well-being by mitigating stigma and shame and cultivating open discussions (captured in the theme *normalize and destigmatize;* N = 51). Further, participants indicated that comprehensive sex education could facilitate greater well-being by reducing guilt, anxiety and fear associated with sexual experiences and by supporting greater physical health, which begets psychological health (captured in the theme *lower negative emotional responses*; N = 125). People suffer when they misunderstand sex, do not have the knowledge to contextualize their experience, and have no space to discuss sex and sexuality openly. This combination of secrecy and a lack of knowledge can lead to fear and shame. Our participants' reflections suggest by promoting understanding and open discussions of sex, comprehensive sex education can improve well-being.

Normalize and Destigmatize. In the theme *normalize and destigmatize,* comprised of two subthemes (*reduce stigma and shame* and *open discussions*), many (N = 51) of the participants endorsed the belief that access to accurate and comprehensive information about sexual health would normalize and destigmatize sexual experiences, outcomes, and identities.

In the subtheme *reduce stigma and shame*, participants (N = 28) highlighted how the taboo nature of sex can contribute to many adverse psychological outcomes, including fear, guilt, and shame ("There is often shame and misinformation around sex." [P#65, male, gay]). Research consistently finds that shame can be a self-perpetuating psychosocial experience, such that shame is intensified by the cultural expectation that people hide their shame (Johnson, 2015). As such, while sexual education programs can serve as a platform to reinforce sexual shame narratives (including those that are heteronormative or cisnormative), they can also serve as a

platform to disrupt shame narratives, as Young and colleagues (2019) put it, by "creating the appropriate space in which shame can be acknowledged without silently being reinforced" (pg. 499). Our participants shared this belief that psychological outcomes associated with being a target of stigma (fear, shame, guilt, etc.) could be attenuated by comprehensive sex education:

> "... it could remove fear and stigma around safe casual sex." P#35 (female, heterosexual)
>
> "It [sex education] reduces the guilt and stigma regarding sex in general…" P#95, (non-binary, pansexual)
>
> "... it may reduce anxiety and shame around sex…" P#204 (female, bisexual)
>
> "... it might reduce stigma for some people." P#48 (female, heterosexual)

While several of our participants felt shame about sex was common, within the *reduce stigma and shame* subtheme, some (N = 16) more specifically emphasized the shame and stigma associated with sexually transmitted infections or diseases (STI/STDs) ("... strong stigma around STDs…" [P#102, male, heterosexual]). Our data suggest that people are aware of the extent to which STIs are stigmatized. This stigma is understood to create psychological problems ("... becoming infected with HPV or any STI can be detrimental to mental health due to stigma." [P#50, female, bisexual]; "... things like HIV can affect someone's mental health and wellbeing due to the stigma around it…" [P#138, female, heterosexual]; "Contracting an STD can be extremely distressing, mostly due to the stigma." [P#29, female, bisexual]), not to mention stigma might be associated with more overt forms of discrimination and abuse ("Some people may receive bullying if they were to contract an STD…" [P#251, male, heterosexual]). Our participants not only felt that comprehensive sex education could promote psychological well-being by reducing STI-related anxiety, but they also shared that

education could promote well-being through destigmatizing STIs/STDs. As P#204 describes, “It [comprehensive sex education] may also reduce stigma around the conditions, which may help those who have them” (female, bisexual). Research suggests that education and knowledge do play a key role in shaping STI stigma and shame, such that people who know someone with an STI diagnosis report less STI-related stigma and people who were less satisfied with their sex education experiences report more STI-related shame (Foster & Byers, 2008).

It was common for participants who highlighted the taboo and stigmatized nature of sex to share how discussing sex openly was not permitted in their cultural contexts. These responses are included in the subtheme *open discussions* (N = 23), which underlines the importance of increasing the accessibility and availability of comprehensive sex education and STI/STD prevention interventions, as they can provide a platform and space to discuss taboo topics that would otherwise be ignored and avoided:

> “... knowing the facts leads to less worrying and fewer taboos.” P#201 (non-binary, bisexual)
>
> “Discussing it causes it to become ‘real’ such that society acknowledges its existence and it is no longer ‘taboo’” P#15 (male, heterosexual)
>
> “... bring the topic into more mainstream conversations, so people will think it’s less taboo to talk about their sexual health” P#265 (female, bisexual)

In the participant’s responses, it is evident many felt comprehensive and accurate sex education can promote psychological well-being through open dialogue and communication.

Taken together, our participants believed sex and sexual topics were taboo and stigmatized in their cultural contexts. Beyond this, they felt sexual shame and stigma

were harmful, as they make targets of that stigma feel anxious, ashamed, and isolated ("... [STDs can] make them feel so alone in the struggle" [P#239, female, bisexual]). As such, our participants felt that sexual education could promote well-being to the extent to which it helps people realize they are not alone ("... less people will feel alone…" [P#142, female, pansexual]), and that their sexual experiences are not abnormal, unusual, or immoral. According to our sample, comprehensive sex education can promote well-being by normalizing sexual diversity and reducing sexual shame and stigma.

Lower Negative Emotional Responses. Within the theme of *lower negative emotional responses* (comprised of two subthemes, *reduce stress, anxiety, fear, and worry* and *healthy body = healthy mind*), numerous participants (N=124) suggested accurate and comprehensive sex education could reduce negative emotions associated with sex (e.g., fear, anxiety, and worry). Further, participants shared their belief that there is a strong connection between access to sex education and exhibiting agency and protection over their sexual health and well-being.

Our participants explain how comprehensive education can contribute towards mitigating negative emotional experiences. Specifically, participants highlighted general anxiety and worry about sex as a key factor that could be impacted through engagement with comprehensive sex education. Indeed, some research suggests that sex education can reduce sex-related anxiety (Hertlein et al., 2015; Wanlass et al., 1983). This is captured within the subtheme of *reduce stress, anxiety, and worry* (N = 61):

> "I'd imagine that people are likely to experience less anxiety and worry around sex if they were properly educated" P#31 (female, heterosexual)
>
> "Generally, correct information helps reduce anxiety…" P#88 (male, gay)

"It would be positive to get that information, it would increase peace of mind, reduce anxiety" P#33 (male, bisexual)

Similarly, negative emotions associated with sex are also present when desires and behaviors begin to fall beyond the scope of traditional cultural or societal norms. This understanding can be linked to the concept of sexual scripts, which may impact emotions associated with intimacy (i.e., anxiety, fear, worry; Gagnon & Simon, 2005; Quinn-Nilas & Kennett, 2018). Sexual Script Theory (SST) was first coined by Simon and Ganon (1969); it can be defined as a set of guidelines (or "script") that is learned from our social learning environment (i.e., movies, family, religious views, school, etc); ultimately impacting our attitudes and behaviors (Quinn-Nilas & Kennett, 2018). Concepts associated with sexual scripts were prevalent within our data set. Participants highlighted the concept of purity culture (see Natarajan, Wilkins-Yel, Sista, Anantharaman, & Seils, 2022) as well as socio-cultural scripts that suppress and control women's sexuality ("Purity culture has never benefited anyone, especially woman as it's meant to control them" [P#112, female, bisexual]). Participant #108 explains how access to comprehensive sex education assists with breaking down scripts associated with purity culture by allowing people to feel more comfortable in their bodies, "I'm a firm believer that sex should be a positive experience. Fear and shame that are used in purity/abstinence culture only obscure and inhibit people from feeling comfortable in their bodies when with others" [male, gay]. Indeed, participants explained how access to sex education reassured them that they might experience diverse sexual desires, which are not to be considered unnatural or worrisome ("...understanding sex is natural would help with others not feeling guilty for engaging in sexual activities…" [P#34, female, heterosexual]; "[sex education] prevents any unnecessary worry" [P#81, female, heterosexual]). Similarly, our data indicates how sexual scripts are reflected in the

traditional teachings of contraceptives. Specifically, scripts that link sex/gender with contraceptive responsibilities ("we were taught at school that it is the females responsibility for birth control/protection but actually the male is just as responsible" [P# 21, female, heterosexual]; "Many men are not educated on female contraception which can cause alot of stress and anxiety about sex for females" [P#163, female, heterosexual]. These statements suggest education could expand the narrative on what behaviors and attitudes exist (or should exist) outside the traditional and/or normative viewpoint, and such expansion could reduce negative emotions around sex and sexual expression.

It was common for participants who highlighted stress, worry, and fear of STI/STD transmission to emphasize the connection between physical and mental health; these excerpts are included in the theme *healthy body = healthy mind* (N = 63). This theme outlines the belief that comprehensive sex education provides an individual with resources to keep their body healthy, which, in turn, leads to a healthy mind. Participants suggest having an understanding of how various infections are transmitted assists with keeping their body protected while reducing anxiety, stress and worry ("...being aware of possible and impossible ways of catching STDs would reduce anxiety and stress" [P#7, male, heterosexual]; "[sex education] could definitely reduce short term anxiety of being pregnant or getting the clap" [P#62, male, heterosexual]). The relationship between physical health and mental health was often cited, even when STI/STD concerns weren't referenced:

> "Just having a better idea of how your body works would improve people's physical and mental experiences of sex" P#29 (female, bisexual)
>
> "...being unaware of how to protect yourself will likely increase sexual anxiety" P#52 (female, lesbian)

"Being healthy in all aspects could improve mental health" P#36 (female, heterosexual)

"They're more likely to be mentally well if their physical health is not impacted" P#43 (female, heterosexual)

Overwhelmingly, our participants placed greater emphasis on the emotional component, rather than the physical component, of STI/STD transmission ("bad experiences with STDs can impact mental health and cause trust issues" [P#188, female, heterosexual]; "STDs can cause a lot of problems and heartache" [P#43, female, heterosexual]). These excerpts reflect participants' belief that by receiving comprehensive sex education, one can better protect and maintain control or agency over their physical health, leading to less anxiety and worry. These findings are supported in similar work where researchers found an HIV-positive diagnosis could lead to HIV-related post-traumatic stress disorder (PTSD) due to impacting factors such as anxiety, stigma, and self-esteem after the diagnosis (Theuninck et al., 2010).

With everything considered, our participants believe implementing accurate and comprehensive sex education can impact well-being by lowering the prevalence of negative emotions (e.g., sexual guilt, anxiety, and worry). They noted that bringing attention to topics set within traditional sexual scripts would expand and challenge these norms, particularly those related to purity culture, sexual desires, and contraceptive responsibility. Furthermore, having access to comprehensive sex education mitigates fear-based responses associated with unfavorable sex outcomes, be that STD/STIs, unplanned pregnancies, or generalized sex anxiety and guilt. Taken together, our participants suggest that comprehensive and accurate sex education may create a healthier experience of sex, both physically and mentally.

Knowledge

This superordinate theme captures participants' belief that having knowledge about sex leads to confidence and an improved understanding of sexual health issues – and, therefore, can facilitate better, healthier, and safer decisions and behaviors. Lack of comprehensive sex and relationship education leads to ill-informed individuals attempting to navigate various challenges, including those related to STI transmission, understanding sexual consent and sexual pleasure, and building healthy partnerships. The provision of accurate and comprehensive information regarding sex and relationships contributes to an individual's ability to make informed choices, which participants reported as increasing safety, feelings of empowerment, and general well-being. Within this theme, we observe the majority of participants (N = 177) suggest with knowledge comes wiser choices when making decisions, engagement in safer sexual practices, a sense of confidence and power over one's personal sex life, and the belief that general awareness on the topic is beneficial in its own right. Thus, within the superordinate theme of knowledge, four themes were detected: *improved and informed decision-making* (N = 28); *safety* (N = 56); *confidence* (N = 36); *awareness* (N = 57).

Improved and Informed Decision-Making. Within the theme of *improved and informed decision-making* (N = 28), participants suggested knowledge would facilitate improved decision-making skills ("The more you know the better-informed decisions you can make about your own sex life" [P#2, female, heterosexual]; "Individuals can make informed decisions which can help people make the right decisions for themselves" [P#261, female, pansexual]; "The more someone knows the more they can make an informed decision over what to do" [P#219, male, heterosexual]). Furthermore, participants linked knowledge and informed decision-making with well-being ("I think it's important for everyone to have adequate knowledge for their own and their partners' well-being" [P#18, female, heterosexual]; "Knowledge reduces uncertainty and

uncertainty can cause anxiety and worries that would not exist if the person knew better" [P#200, female, bisexual]; "Being fully educated about something enables informed decision-making, this helps with well-being" [P#213, male, heterosexual]). Indeed, previous researchers explain individuals who hold strong sexual decision-making skills can meet family planning goals more successfully and report greater levels of pleasure when sexually active (Fuller et al., 2022; Oswalt, 2010). Our participants clearly feel that informed decisions are good decisions, and the extent to which accurate sex education facilitates informed decision-making contributes significantly to its value.

Participants (N = 15) continued to explain information gained from sex education can assist with proactive decision-making rather than retrospective management ("With education, people can make well-informed decisions before engaging in sex" [P#188, female, heterosexual]; "People would be more educated on this topic which could lead them to critically think before getting themselves into something they wish they didn't if they had the knowledge on it" [P#252, female, heterosexual]). Again, participants linked proactive decision-making to mental health and well-being ("People would be well informed to prepare and make decisions when the time comes, [comprehensive sex education] would make them less stressed and anxious." [P#173, female, heterosexual]). Participants reflected that a key advantage of informed decisions was their ability to support planning and preparation - this may be particularly critical given that of the negative or distressing outcomes associated with sex, sexual regret is more common than other, more thoroughly investigated, physical outcomes (e.g., STI/STD transmission, unplanned pregnancy; Oswalt et al., 2005).

Taken together, participants share how knowledge gained by comprehensive sex education allows an individual to choose if/when/how they would like to engage in

sex, reduce sexual anxiety and worry, and experience increased overall well-being through *improved and informed decision-making*. As previous literature and our data suggest, when individuals are not provided with adequate knowledge of sex education or skills to engage in informed sexual decision-making, it can potentially set them up to fail when navigating such challenges ("Knowledge is empowering and the more people know about their own bodies and protective practices the more likely they are to be able to make informed choices." [P#51, female, bisexual]). Participants' responses within this theme reflect the belief that receiving informed sexual decision-making skills from comprehensive sex education builds a foundation for experiencing a healthy and happy sex life.

Safety. Closely linked to the notion of informed decision-making, *safety* (N = 56) is another theme connecting knowledge gained from comprehensive sex education to psychological well-being. As explained by P#25, "Sex education is vital to mental health and well-being because understanding the nuances of sex and safe sex is important to having a safe and fulfilling sex life" (female, heterosexual). Safe sex should not just be defined as protection from STI transmission and unplanned pregnancies; it also encompasses emotional attributes allowing an individual to engage in the activity confidently and consensually. As such, P#95 shares, "...[sex ed] is one of the best ways to destigmatize rape victims and give them the language to protect themselves or expose their attackers" (non-binary, pansexual). By understanding what safe consensual sex 'looks' like, one can detect unsafe sexual advances better. This idea that safe sex is not simply disease-free sex, but is also emotionally safe, is supported by research from Cook and Wynn (2021). Their participants explained that safe sex is consensual, involves both emotional and physical safety, and prioritizes agency (e.g., having sex because you want to, not to please another).

Together these findings highlight why safe sex goes beyond avoiding STI transmission and unplanned pregnancies. The subtheme of *safety* provides insight into how knowledge of healthy relationships via comprehensive sex education is perceived to increase one's ability to protect themselves emotionally and physically. One of our participants captures this relationship between knowledge, safety, and well-being particularly well, "If you are happy, your mental health is better. Knowing you're having safe sex makes you happy" [P#16, male, heterosexual].

Confidence. When reflecting on the mental health benefits of accurate sex education, several participants shared that *improved and informed decision-making* and increased ability to engage in *safe* sex resulted in feeling more *confident* (N = 36). Indeed, we see the themes interlinked by P#226, "Information and knowledge is key for people to be confident in knowing how to practice safe sex relations" [female, heterosexual]). Similar to the concept of proactive decision-making versus retrospective management within the *improved and informed decision-making* theme, we see participants reflecting on personal experiences associated with *confidence* and *safety*. Specifically, participants explained their desire to have previously received comprehensive sex education to gain the confidence and decision-making skills to engage in safe sexual practices ("It could give a young person the facts and the confidence not to engage in unsafe sex like I did" [P#214, female, heterosexual]). These findings are echoed in the broader literature on the topic of sex education, where various researchers explain greater levels of sexual health knowledge are associated with variables such as sexual confidence and assertiveness (Weinstein et al., 2008) and self-acceptance (Woodford et al., 2018).

Confidence on its own is cited within the data as facilitating improved mental health and well-being ("It [sex ed] would increase confidence which would then

naturally and positively affect one's mental health" [P#195, female, heterosexual]; "...[sex ed will impact mental health] largely by instilling confidence and reducing anxiety" [P#76, female, bisexual]). Participants also explained how education is linked to confidence and independence ("The more educated you are about sex the more confidence and independence it can give you" [P#6, female, heterosexual]. It was clear that participants felt that sex education creates a sense of empowerment over oneself ("The ability to be responsible and care for oneself is emotionally empowering" [P#38, female, heterosexual]).

Building on the idea of emotional empowerment, within the *confidence* theme, we see that some in our sample (N = 3) attributed comprehensive sex education to the ability to better manage unrealistic expectations that may arise from sex portrayed by the media:

> "I think for some their mental health is often affected by anxieties to do with unrealistic standards propelled in the media. E.g. they believe their boobs or genitalia should look a certain way, or they should be having sex at a certain age due to social media and therefore think something is wrong with them when they don't meet those standards. Therefore, being more [educated] on the matters may ease some anxieties and help their well-being" (P#156, female, heterosexual)

Overall, many of our participants believe that comprehensive sex education improves mental health by instilling *confidence* - and while confidence is desirable in its own right, confidence may facilitate improved well-being through empowerment to make healthy and safe sexual choices.

Awareness. Drawing on our participants' outlook regarding *awareness* (N = 57), many stated they felt their sex education lacked relevance to modern-day social norms concerning gender, non-hetero and/or non-penetrative sex, and consent. Overall, our

participants expressed a desire for a deeper awareness from sex education curricula. Participants shared that much of the information within our study was new to them ("...awareness is essential and should be more in-depth as I didn't know about the things in most questions" [P#242, male, heterosexual]; "I haven't been taught about stuff like this so I think it is really important" [P#177, male, gay]; "After completing this survey I realised I do not know as much as I should" [P#166, female, heterosexual]). Furthermore, participants explained how this experience of inadequate sex education perpetuated their worries from adolescence into young adulthood rather than providing them with a foundation to make safe and informed decisions ("[from lack of proper sex ed] I have seen people well in their 20s worrying and being anxious about the stuff they shouldn't be worrying [about]" [P#39, female, heterosexual]; "I had a required class in high school that taught sex education. It didn't do anything for me…and thank god I haven't run into any personal issues" [P#63, female, heterosexual]).

Overall, as participants share the limitations of their own education and the limits of their own understanding, they reflect that they want more from their sexual education experiences. Our participants want a sexual education curriculum that reflects modern-day sexual diversity, experiences, and challenges ("promote consent, individual rights, wishes [desires] and protection, overall set a stage for quality sexual behavior and security in sexual identity…" [P#101, female, heterosexual]). Concerning our participants' claims, Hole and colleagues (2022) report traditional sexual education was often described as "mechanistic", where their participants were hoping to have topics relating to pleasure, sexual diversity, and self-efficacy. Yet, instead, they received basic biology lessons on genitalia, why people with a womb have periods, and the risks associated with sex.

Together, our analysis revealed themes that connect increased knowledge to improved and informed decision-making skills, safer sex (both emotionally and physically), and increased confidence. The superordinate theme of knowledge illustrates participants' belief that comprehensive sex education links to mental health and well-being by providing people with adequate knowledge to form a foundation for a healthier and happier future.

Exploratory Analyses

To explore whether participants' age (young adults (18-34) vs. middle-aged (35-54) vs. older adults (55-74) or previous sex education experiences (abstinence-focused vs. comprehensive vs. no sex education) influenced responses and the emergence of specific themes, contingency tables were produced via a series of chi-square analyses (see Table 3). The results indicate that most themes were not influenced by an individual's age or previous education experience. However, a chi-square test of independence revealed a significant association between sex education received and the subtheme reducing stigma and shame, $\chi^2(2) = 8.78$, $p = .012$, Cramer's $V = .182$. We find that participants who received abstinence-focused sex education were more likely to share responses coded as reducing stigma and shame compared to those who received comprehensive or no sex education. This means that individuals who received abstinence-focused sex education in school were more likely to state that access to comprehensive sex education would further reduce sexual health-related stigma and shame. The potential for accurate and comprehensive sex education to reduce stigma and shame may be particularly salient for participants exposed to abstinence-focused sex education, given that students in abstinence-only programs (particularly those with marginalized identities) describe the curricula as fear and shame inducing (Hoefer & Hoefer, 2017).

[Table 3 Here]

Limitations

Despite our attempts at employing our survey in racially, ethnically, and age-diverse populations through various platforms and survey tools, roughly 50% of our responses were from heterosexual females between 18-34 years old, suggesting our data is skewed towards experiences and viewpoints of younger, heterosexual women. Another limitation of this study is that the research question was framed as linking education to mental health and well-being (i.e., “do you believe that medically accurate sex education and STD prevention interventions could improve a person's mental health and well-being?"). Although the themes were detected from the participant's reflections on the question, the framing of the item could have unintentionally biased their responses. As such, researchers Noble and Smith (2015) outline the importance of eliminating leading questions and word biases within qualitative research. Based on various suggestions from their review, future researchers should investigate the link between comprehensive sex education, mental health, and well-being through items that are phrased a bit more broadly (e.g., “what outcomes do you think are associated with accurate and comprehensive sex education?”) or through the use of questions that reflect multiple frames and anchors (e.g., “Do you think accurate and comprehensive sex education affects people’s physical health? Why or why not?”; “Do you think accurate and comprehensive sex education affects people’s psychological health? Why or why not?”).

Lastly, this data holds a sense of hypothetical or imagined nature as we asked people to reflect on what they perceive as the psychological outcomes or benefits associated with accurate and comprehensive sex education. Therefore, we suggest a study design that includes an accurate and comprehensive sexual health and relationship

workshop or training and the use of structured or semi-structured interview methods (e.g., including questions with diverse stems and framings, as well as the use of follow-up questions and probing) would be useful to replicate and confirm the identified themes.

Implications

The findings from this analysis provide direct insight into people's beliefs about the benefits and value of access to sex and relationship education (e.g., contraceptive use, family planning, consent, sexual diversity, psychological safety, etc). These findings can be applied in a variety of settings, such as policy and practice; sexual health advocacy; sex education curriculum development/deployment; school nurses and family practitioners; as well as academic research.

For example, with respect to policymakers and legislators, participant responses outline that future policy development for sex education should promote awareness, body autonomy, and confident decision-making skills. Furthermore, legislators should reflect and listen to participant responses that bring light to the costs associated with an abstinence-focused curriculum. In other words, a curriculum that positions contraceptive measures as a female issue, enforces a cis-gender and heterosexual narrative, and pushes aside experiences of gender-expansive identities and further marginalized groups should no longer be implemented, encouraged, or considered the societal norm. Building on Sleeter and Grant's critique regarding the importance of representation in school textbooks for how youth perceive and comprehend their own experiences (2011), it is essential that curriculum developers prioritize both comprehensiveness and representation in educational materials. To address this concern, curriculum developers could incorporate greater diversity by including textbook images

inclusive of non-heterosexual relationships and by depicting the medical terminologies of reproductive organs, vulvas, and penises, which feature individuals from various racial backgrounds. Lastly, for practitioners, having a thorough understanding of how various psychological concerns may manifest during puberty can be useful for school nurses and primary care physicians as they are a critical component and source of information for adolescents and young adults when navigating the challenges related to sexual development.

Across the world, several countries and states uphold mandates where pupils are only allowed to receive abstinence-focused material (Horanieh et al., 2020; Lweinger & Russell, 2021; Planned Parenthood Action Fund, 2022; The SIECUS State Profiles, 2023; Thin Zaw et al., 2021). As such, we understand the legislative policies surrounding the teachings of comprehensive sex education are an uphill battle with nuanced language and restrictive mandates. However, we argue that by bringing awareness and acknowledgment of the substantial mental health benefits, we can slowly create change on the individual level while we work towards challenging unjust systemic issues.

Conclusions

When asked to reflect on the potential mental health and well-being outcomes associated with accurate and comprehensive sex education, participants overwhelmingly shared that being better informed about sexual health could lead to a number of positive personal and relational consequences. Participants wanted more from their sexual education experiences and felt that improved sexual education curricula would improve their own - and others' - psychological health and wellness. Although literature commonly emphasizes the physical health benefits associated with accurate and

comprehensive sex education (Goldfarb & Lieberman, 2021), our findings suggest that a host of psychological outcomes should be explored in the sexual health and sexual education literature. Overall, our participants believed having a healthy and happy intimate life would lead to a healthier and happier state of mind.

Disclosure statement

The authors report that there are no competing interests to declare.

Ethics Committee Approval Statement

The Health, Medicine, and Life Sciences Ethics Committee approved the study at Brunel University London. Approval codes: 30075-MHR-Apr/2021-32372-2 and 32039-MHR-Oct/2021-34631-3.

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Data availability

The data supporting this study's findings are available from the first author, TA, upon reasonable request.

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