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ADOLESCENT SEXUAL SAFETY IN SUCAT, MUNTINLUPA CITY: A CONVERGENT MIXED-METHODS STUDY FOR A CONTEXTUALIZED SEX EDUCATION GUIDE

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ABSTRACT

Adolescent sexual safety remains a pressing public health and educational concern in the Philippines, where teenage pregnancy and persistent misconceptions indicate continuing gaps in the implementation of comprehensive sexuality education (CSE). This study employed a convergent mixed-methods design to examine the knowledge, attitudes, practices, barriers, and preferences of senior high school students in Sucat, Muntinlupa City, as a basis for developing a contextualized sex education learning guide. Quantitative data were collected from 210 students through a structured survey, while qualitative data were generated from semi-structured interviews with 12 purposively selected participants. Quantitative responses were analyzed using descriptive statistics, and qualitative data were examined through thematic analysis. Findings were integrated at the interpretation stage using a convergence matrix. Results showed that students demonstrated strong knowledge of condoms, HIV transmission, consent, and digital safety. However, notable misconceptions remained regarding emergency contraception (28.1% correct), daily contraceptive pill adherence (49.5%), and HPV vaccine protection (40.0%). Participants also expressed generally favorable attitudes toward abstinence, responsible contraceptive use, respect for consent, and digital caution. Reported practices revealed substantial reliance on peers and online platforms, with comparatively limited engagement from teachers and parents. Stigma and fear of judgment emerged as major barriers, whereas trust in health workers and confidentiality in clinics functioned as enabling factors. Students preferred sex education approaches that were interactive, skill-based, confidential, and selectively inclusive of parents. The findings underscore the need

for localized, youth-responsive, and stigma-sensitive school-based sex education that addresses persistent misconceptions and strengthens safe, informed decision-making.

Keywords: *adolescent sexual safety, convergent mixed methods, knowledge, attitudes, and practices, barriers, sex education*

INTRODUCTION

Adolescence is a critical developmental stage marked by rapid biological, psychological, and social change. During this period, young people begin to make decisions about relationships, identity, bodily autonomy, and health behavior, making sexual and reproductive health education a central educational concern rather than a peripheral topic. Comprehensive sexuality education (CSE) has been widely recognized as an evidence-informed approach that can strengthen adolescents' knowledge, attitudes, and practical skills related to contraception, sexually transmitted infections (STIs), consent, and healthy relationships. Recent evidence also shows that school-based sexuality education is more effective when it is age-appropriate, participatory, and responsive to learners' social realities (Barriuso-Ortega et al., 2024; UNESCO, 2018).

The urgency of this issue remains clear. The World Health Organization has emphasized that adolescent pregnancy continues to carry serious health, social, and economic consequences, including higher risks of poor maternal and newborn outcomes, interrupted schooling, and long-term inequality. In the Philippines, the issue remains a major concern, and UNFPA Philippines has continued to identify comprehensive sexuality education and improved adolescent access to services as key responses to teenage pregnancy and its related harms (United Nations Population Fund Philippines, 2020; World Health Organization, 2024).

The Philippine policy environment provides an important foundation for action. Republic Act No. 10354, or the Responsible Parenthood and Reproductive Health Act of 2012, explicitly provides for age- and development-appropriate reproductive health education for adolescents and underscores the State's role in ensuring access to health information and services. However, formal policy does not automatically translate into effective school- and community-level implementation. Recent Philippine evidence shows that barriers such as provider hesitation, limited service responsiveness, and adolescents' fear of judgment continue to weaken the delivery of sexual and reproductive health programs. This gap between policy intent and lived implementation makes localized school-based research especially necessary (Dela Luna et al., 2024; Republic of the Philippines, 2012).

The literature also shows that adolescent sexual health knowledge is often uneven rather than uniformly weak. Young people may demonstrate adequate awareness of condoms, pregnancy risk, and HIV transmission, yet still misunderstand less frequently discussed but important topics such as emergency contraception, correct contraceptive use, and other preventive options. A multicountry analysis by Palermo et al. (2014) found

substantial variation in knowledge and use of emergency contraception across settings, while Mollen et al. (2013) reported that even adolescents who had heard of emergency contraception often misunderstood its timing and use. These findings suggest that awareness alone is not enough; adolescents need accurate, applied, and contextually meaningful instruction that goes beyond surface familiarity (Mollen et al., 2013; Palermo et al., 2014).

Equally important, adolescents do not rely on a single source of sexual health information. Recent reviews show that they obtain information from family, friends, school, and the internet, with topic choice and source preference often shaped by privacy, accessibility, and perceived trustworthiness. Silva et al. (2024) found that adolescents commonly use multiple formal and informal sources, especially for topics that are less openly discussed. Pleasants et al. (2024) further showed that preferred and actual sources of contraceptive information often do not match, and that clinicians and, for younger adolescents, parents are associated with a stronger sense of having sufficient information. These findings are especially relevant to school-based sexuality education because they show that adolescents are actively searching for information, but not always from the sources they consider most helpful or most credible (Pleasants et al., 2024; Silva et al., 2024).

Digital spaces have made this issue more complex. Adolescents increasingly encounter sexual health content through websites, social media, and peer-generated online discussion, which can expand access but also expose them to misinformation. Freeman et al. (2023) found that adolescents' trust in health information on social media is shaped by their trust in the platform, in other users, and in the content itself, including tone, appearance, and perceived expertise. Allsop (2024) likewise argued that adolescent online sexual health information-seeking is influenced by broader social media culture and by the motivational and relational dynamics of digital participation. Taken together, these studies suggest that contemporary sexuality education must address not only reproductive health content, but also digital literacy, source evaluation, and online safety (Allsop, 2024; Freeman et al., 2023).

Another consistent theme in the literature is that favorable attitudes do not always translate into help-seeking or protective practice. Privacy, confidentiality, and provider bias remain major barriers to adolescent access to sexual and reproductive health services. Corley et al. (2022) found that poor privacy practices, fear of judgment, and provider bias significantly discourage young people from seeking care. In the Philippine context, implementation analyses likewise show that stigma and reluctance within service systems can limit adolescents' willingness to seek reproductive health support. At the same time, older Philippine evidence suggests that many Filipino youth still navigate sexuality within a conservative moral environment, which may reinforce silence, hesitation, or discomfort around open discussion. These patterns indicate that effective sexuality education must be accurate and developmentally appropriate, but also psychologically safe, stigma-aware, and responsive to the realities of help-seeking among adolescents (Corley et al., 2022; Dela Luna et al., 2024; Lacson et al., 1997).

Although international and national literature has already established the importance of comprehensive, youth-responsive sexuality education, an important gap remains in localized school-based evidence from the Philippines. Much of the available literature is policy-oriented, international, or broad in scope. Fewer studies examine, within one public school context, how adolescents' knowledge, attitudes, practices, barriers, and learning preferences intersect and how these may inform a contextualized instructional response. This gap is important in urban school settings such as Sucat, Muntinlupa City, where adolescents navigate a combination of conservative norms, digital exposure, mixed information sources, and uneven access to trusted adult guidance. In response, the present study investigates adolescent sexual safety among senior high school students in Sucat, Muntinlupa City, focusing on knowledge of pregnancy prevention, STIs/HIV, consent, and digital safety; attitudes and practices related to sexual health; barriers and enabling factors affecting access to accurate information and services; and learner preferences for the content and delivery of school-based sex education. By generating localized evidence, the study aims to provide an empirical basis for a contextualized sex education guide that is age-appropriate, culturally relevant, and responsive to learner needs. This contribution is timely because effective sexuality education depends not only on national policy and international guidance, but also on school-level evidence that reflects the realities of the learners it intends to serve (Barriuso-Ortega et al., 2024; Dela Luna et al., 2024; Pleasants et al., 2024; Silva et al., 2024).

Research Questions

1. How knowledgeable are students about pregnancy prevention, STIs/HIV, consent, and digital safety?
2. What attitudes do students hold toward abstinence, contraceptive use, consent, and digital security?
3. What sexual health-related practices and information-seeking behaviors do students exhibit with respect to sex, relationships, and reproductive health?
4. What barriers and enabling factors affect students' access to accurate sexual health information and services?
5. What content and delivery preferences do students have for a school-based sex education module that is age-appropriate, culturally relevant, and responsive to their needs?

METHODOLOGY

This study employed a convergent mixed-methods design, which enabled the concurrent collection of quantitative and qualitative data, their separate analysis, and their integration at the interpretation stage. The design was appropriate because the study sought both measurable patterns and explanatory accounts of adolescents' knowledge, attitudes, practices, barriers, enabling factors, and preferences related to sexual safety. The quantitative strand generated broad descriptive evidence, whereas the qualitative strand provided contextual insights into students' lived experiences and perspectives, thereby strengthening triangulation and interpretive depth.

The study was conducted at Sucat Senior High School in Muntinlupa City, Philippines. The quantitative respondents consisted of 210 senior high school students selected through simple random sampling using a random number generator. A complete list of enrolled senior high school students served as the sampling frame, from which respondents were randomly selected using a randomization procedure. No clustering or stratification was applied because each eligible student had an equal chance of selection. The qualitative strand included 12 purposively selected students, aged 16 to 21 years, chosen on the basis of their willingness to participate, their representation across academic strands, and an effort to achieve gender-balanced perspectives. This sampling strategy allowed the study to capture both general patterns and diverse student viewpoints relevant to adolescent sexual safety.

Data were collected using a researcher-developed structured questionnaire and a semi-structured interview guide aligned with the five domains of the study: knowledge, attitudes, practices and information-seeking behaviors, barriers and enabling factors, and module design preferences. The final questionnaire consisted of 65 items distributed across five sections: Demographics (5 items), Knowledge (20 items), Attitudes (10 items), Practices and Information-Seeking Behaviors (10 items), Barriers and Enabling Factors (10 items), and Module Design and Preferences (10 items). Knowledge items were scored according to correctness, while the remaining sections used response formats appropriate to the construct being measured, including Likert-type, yes/no, and preference items. The instrument underwent expert content validation and pilot testing prior to full administration.

To ensure methodological rigor, the study employed appropriate validity and reliability procedures for both the quantitative and qualitative strands. The survey questionnaire and the semi-structured interview guide were subjected to expert review by three specialists: a psychometrician, a research teacher, and a statistician. Their evaluation established content validity by examining the instruments' alignment with the study objectives, clarity of language, and relevance of each item. The questionnaire was then pilot-tested with 20 students from a comparable school to refine item wording, sequencing, and overall structure. Internal consistency reliability was assessed using Cronbach's alpha for Likert-type subscales and Kuder-Richardson-20 for knowledge items which produced a coefficient of 0.85 and 0.83 respectively, indicating good reliability Internal consistency reliability was assessed using Cronbach's alpha for the Likert-type subscales and Kuder–Richardson 20 for the knowledge items, yielding coefficients of 0.85 and 0.83, respectively, which indicate good reliability. For the qualitative strand, credibility was strengthened through member checking, in which selected participants verified the accuracy of their interview transcripts, and peer debriefing, which enhanced the transparency and trustworthiness of the thematic analysis.

Data collection was conducted from August to September 2025. After securing institutional approval, the researcher administered the survey to the selected student respondents. During the same study period, semi-structured interviews were conducted with the purposively selected participants to obtain richer accounts of their sexual health knowledge, information-seeking behaviors, perceived barriers, and preferred instructional

approaches. The two strands were collected within the same phase of the study and were intentionally analyzed independently before integration.

Quantitative data were encoded and analyzed using descriptive statistics. Percentages were used to summarize knowledge and practice indicators, while knowledge scores were computed as the proportion of correct responses. For 4-point Likert-scale items, medians were used to describe the central tendency of attitudes, barriers/enablers, and preferences. No inferential statistics were applied because the study was primarily descriptive and intended to generate an empirical basis for a contextualized sex education learning guide. Qualitative data were transcribed and analyzed using thematic analysis, which involved repeated reading of transcripts, initial coding, clustering of related codes, and the development of subthemes and major themes aligned with the study objectives. The quantitative and qualitative findings were then merged through a convergence matrix, which was used to identify points of confirmation, complementarity, and divergence across the two strands.

In terms of scope, the study was limited to the assessment of students' knowledge, attitudes, practices, barriers, enabling factors, and preferences related to sexual safety within a single urban public senior high school. As a cross-sectional mixed-methods inquiry, it was designed to describe current conditions rather than establish causal relationships or evaluate intervention outcomes. Several limitations should therefore be acknowledged. First, the single-site setting limits the broader generalizability of the findings, particularly to rural or socioeconomically different contexts. Second, the use of self-reported data may have introduced social desirability bias, especially given the sensitivity of the topic. Third, the qualitative sample was intentionally small and purposive, which strengthened depth but not statistical representativeness. Accordingly, the findings should be interpreted as context-specific evidence intended to inform localized module development rather than as universally generalizable conclusions about all Filipino adolescents.

RESULTS

Table 1. Knowledge (pregnancy prevention, STIs/HIV, consent, digital safety)

Major Theme	Codes	Matching Survey Items	Percentage Correct	Interpretation
Basic Knowledge of Pregnancy Prevention	"Use condoms every time" (protect), Basic Knowledge of Pregnancy Prevention	Condoms effectiveness	79.5%	Pattern: good on condoms & pills-not-STI; weak on Emergency contraceptive (28.1%) and
		Pull-out reliability	51.4%	
		Pills protect pregnancy not STIs	76.7%	

	"pills prevent pregnancy, not HIV," "EC within 72h," "first time can get pregnant"	Pills must be taken daily Emergency contraception with 72 hours First time can get pregnant	49.5% 28.1% 67.1%	pills-daily (49.5%).
Knowledge of STI/HIV Risks	"Condoms prevent HIV," "multiple partners ↑ risk," "HPV vaccine helps"	HIV via unprotected sex Sharing needles HPV vaccine prevents some STIs HIV via casual contact (False) Multiple partners high risk	93.8% 81.0% 40.0% 63.8% (False) 84.3%	strong on transmission basics; gap on vaccines (40.0%) and some confusion on casual contact (63.8%).
Understanding of Consent	Freedom to say yes/no," "mutual decision," "alcohol impairs consent," "silence ≠ consent"	Consent = freely agree (True) Alcohol/drugs affect decisions (True) Both partners responsible (True) Silence=consent (False)	85.7% 88.6% 86.2% 80.0% (False)	very solid conceptual grasp; some still misread silence.
Digital Responsibility in Relationships	"Mindful online," "one mistake can change your life," "don't overshare," "beware nudes/exposure"	Sharing intimate photos → risks (True) Personal info → privacy/safety (True) Sexting is safe (False); Be cautious with strangers (True)	92.9% 94.3% 80% 85%	Digital risk awareness is a strength.

Table 2. Attitudes toward abstinence, contraceptive use, consent, digital security

Major Theme	Codes	Matching Survey Items	Median	Interpretation
Attitudes Toward Abstinence	"I have my own law: no sex at this age"; "abstinence is safest"	Wait until ready	3.40	strong endorsement of abstinence; reflects conservative protective view.
Conditional Acceptance of Contraceptives	"Good practice but for big decisions," "good but can be misused"	Using contraception shows responsibility, not immorality	3.37	contraceptives accepted but with cautious reservations.
Consent as Mutual Respect	"Mutual decision," "foundation of trust," "harassment if forced"	Respect 'No' Both sexes equally responsible	3.84 3.71	very firm support for consent and shared responsibility.
Importance of Digital Security	"Don't overshare," "risk of exposure," "privacy matters"	Protect personal photos/messages Sharing private info affects relationships	3.78 3.67	solid grasp of online risks; privacy strongly valued.

Table 3. Practices & Information-Seeking Behaviors

Major Theme	Codes	Matching Survey Item(s)	Percentage (Yes)	Interpretation
Safe Sexual Practices	"Seminars help," "use condoms," "avoid risky situations"	Attended Reproductive Health seminar/activity	74.3%	Shows healthy exposure to school/community programming.
Reliance on Digital & Social	Google/TikTok/ChatGPT/YouTube,"	Searched online	86.2%	High search behavior but lower curation skill.

Sources	“trusted sites/apps”	Know trusted site/app	48.1%	
Peer /Adult Based Info Sharing	“Ask friends/teachers/parents,” “anonymous Q&A helpful”	Talked to teacher Discussed with parents Asked friends Used anonymous Q&A	32.9% 25.2% 48.6% 22.4%	Students prefer peers over adults; anonymity used by a subset.

Table 4. Barriers & enablers to access information/services

Major Theme	Codes	Matching Survey Items	Median	Interpretation
Social & Cultural Barriers	“Embarrassment,” “fear of being judged,” “minor status”	Worried about being judged if I ask	2.73	stigma is still prevalent.
Accessibility of Information/Support	“Supportive teacher helps,” “approachable health workers”	Health workers approachable Clinic privacy trusted	3.13 3.23	service trust is decent.
Educational Gaps	“Lack of sex ed,” “confusing terminologies,” “informal teaching”	Comfort asking teachers Comfort asking parents	2.6 2.8	comfort is middling, matches the stigma barrier.

Table 5. Preferences for content & delivery

Major Theme	Codes	Matching Survey Items	Median	Interpretation
Comprehensive Curriculum Needs	“Contraception, consent, STI/HIV, puberty, online safety,” “consequences of unsafe sex”	Sex ed should focus on practical skills (condom use, saying “no”)	3.47	strong appetite for skills-based, applied content.
Interactive & Student	“Digital modules,” “peer	Interactive activities more	2.91	clear preference for

Centered Approaches	led," "Q&A," "small groups," "role-play"	helpful than lectures		active learning.
Contextualized & Supportive Learning	"Real-life examples," "age appropriate," "safe space," "involve parents selectively"	Confidentiality important Parents involved in selected parts	3.60 3.30	Students want privacy + calibrated parent involvement.

DISCUSSION

Objective 1: Assess the current level of students' knowledge on pregnancy prevention, STIs/HIV, consent, and digital safety

Table 1 indicates that the respondents possess a generally strong foundational knowledge of adolescent sexual safety, particularly in the areas of condom effectiveness, HIV transmission, consent, and digital risk awareness. The convergence of quantitative and qualitative findings shows that students already recognize several core protective concepts, such as the role of condoms in preventing pregnancy and reducing HIV risk, the importance of mutual consent, and the dangers associated with sharing intimate content online. At the same time, the findings also reveal that this knowledge is uneven rather than comprehensive, as important misconceptions remain in more technical or less frequently discussed topics, particularly emergency contraception, contraceptive pill adherence, HPV vaccination, and myths related to HIV transmission through casual contact. This overall pattern supports the study's central premise that adolescents may be knowledgeable about basic sexual safety concepts while still lacking accurate understanding of more specific reproductive health details.

In the domain of pregnancy prevention, students demonstrated relatively strong knowledge regarding condoms (79.5%) and the fact that contraceptive pills prevent pregnancy but not sexually transmitted infections (76.7%). A majority also correctly recognized that pregnancy can occur during first sexual intercourse (67.1%). However, the results point to weaker understanding in more nuanced areas. Only 49.5% correctly identified that oral contraceptive pills must be taken daily, and only 28.1% correctly recognized the correct timing of emergency contraception. These results suggest that students are more familiar with commonly discussed preventive methods than with the correct use of time-sensitive or routine contraceptive options. This finding is consistent with the literature reviewed in the Introduction, which noted that adolescents often demonstrate baseline awareness of contraception while remaining uncertain about emergency contraception and proper contraceptive use (Mollen et al., 2013; Palermo et al., 2014). It also reinforces the argument that sexuality education must move beyond

simple awareness and address practical accuracy, especially on topics that are medically important but less openly discussed in school and community settings.

A similar pattern emerged in students' knowledge of STIs and HIV. The respondents showed high levels of correct understanding that HIV may be transmitted through unprotected sex (93.8%) and sharing needles (81.0%), and that having multiple sexual partners increases risk (84.3%). These findings indicate that students have already internalized several core concepts related to HIV transmission and risk exposure. However, only 40.0% correctly identified that the HPV vaccine can prevent some sexually transmitted infections, and a substantial proportion still showed confusion regarding HIV transmission through casual contact, with only 63.8% correctly rejecting this misconception. These results suggest that while students understand the major routes of HIV transmission, some misinformation remains, particularly in areas involving preventive vaccination and non-transmission myths. This is consistent with the literature emphasizing that adolescent sexual health knowledge is often strongest in highly publicized topics, such as HIV and condoms, but weaker in newer or less emphasized areas such as vaccines and specialized preventive strategies (Abewa et al., 2024; Acen et al., 2025; Palermo et al., 2014). The persistence of misconceptions about casual contact further suggests that misinformation continues to coexist with correct knowledge, which may affect how adolescents interpret risk and stigma in real-life situations.

The findings on consent are among the strongest in the table and represent a notable strength of the respondents' knowledge profile. High proportions of students correctly identified that consent means freely agreeing (85.7%), that alcohol and drugs can affect decision-making (88.6%), and that both partners are responsible in sexual decision-making (86.2%). Likewise, 80.0% correctly rejected the idea that silence automatically means consent. These results indicate that students possess a solid conceptual understanding of consent as mutual, voluntary, and informed. The qualitative codes, including "freedom to say yes/no," "mutual decision," and "silence ≠ consent," support this interpretation and show that students are not merely recalling isolated facts but are able to articulate consent as a relational and ethical principle. This finding is consistent with contemporary comprehensive sexuality education frameworks, which emphasize that sexuality education should include not only biological and preventive knowledge but also interpersonal respect, boundaries, and decision-making (Barriuso-Ortega et al., 2024; UNESCO, 2018). At the same time, the fact that one-fifth of respondents still misread silence as consent indicates that this topic requires continued reinforcement, particularly through realistic scenarios and applied discussion rather than definition-based teaching alone.

Digital safety likewise emerged as a major area of strength. Very high percentages of students recognized that sharing intimate photos entails risk (92.9%), that personal information affects privacy and safety (94.3%), and that caution is needed when dealing with strangers online (85.0%). Moreover, 80.0% correctly rejected the statement that sexting is safe. These findings suggest that respondents are highly aware of the risks associated with digital interaction in relationships. The qualitative evidence, such as "don't overshare," "beware nudes/exposure," and "one mistake can change your life," further

supports the conclusion that students already perceive digital conduct as part of sexual safety. This pattern aligns with the literature cited in the Introduction, which notes that adolescents increasingly navigate sexuality in digital environments and therefore require not only reproductive health knowledge but also online safety and source evaluation skills (Allsop, 2024; Freeman et al., 2023). The strong performance in this domain may reflect the everyday relevance of digital risks in adolescents' lives. However, awareness of digital risk should not be interpreted as immunity from online misinformation or exploitation. Rather, it suggests that digital safety is an appropriate and necessary entry point for contextualized school-based instruction.

Table 1 presents a mixed but meaningful knowledge profile: students are well grounded in the basics, but their understanding becomes less reliable in technical, less visible, or more specialized aspects of sexual health. This pattern is highly consistent with the broader literature, which argues that adolescent knowledge is often fragmented rather than uniformly deficient. As noted in the reviewed studies, young people may be confident about condoms, HIV risk, and general prevention while still misunderstanding emergency contraception, daily contraceptive adherence, or the protective role of vaccines (Abewa et al., 2024; Acen et al., 2025; Mollen et al., 2013; Palermo et al., 2014). In this respect, the present findings neither wholly confirm nor contradict prior studies; rather, they localize an internationally observed pattern within the context of senior high school students in Sucat, Muntinlupa City. The results therefore strengthen the argument that localized sexuality education must not assume that strong general awareness automatically translates into complete or accurate knowledge.

From an educational standpoint, these findings have clear implications for module development. Since respondents already demonstrate sound understanding of core concepts, the immediate need is not simply more information, but more precise, applied, and corrective instruction. The weakest areas identified in the table which are emergency contraception timing, daily contraceptive pill adherence, HPV vaccine protection, and misconceptions about casual HIV transmission, should be treated as priority content areas in the proposed contextualized sex education guide. Lessons should therefore be designed to correct myths, clarify technical details, and connect factual knowledge with realistic decision-making contexts. In this sense, the findings suggest that the next step in adolescent sexual safety education is to deepen and refine what students already know so that foundational knowledge can translate into safer, more informed judgment and behavior.

Objective 2: Examine students' attitudes toward abstinence, contraceptive use, consent, and the importance of digital security

Table 2 shows that the respondents hold generally favorable and protective attitudes toward key dimensions of adolescent sexual safety. The convergence of quantitative and qualitative findings indicates strong endorsement of abstinence, a generally positive but cautious view of contraceptive use, firm support for mutual consent, and a clear appreciation of digital privacy and security. Taken together, these results suggest that the students' attitudinal profile is not permissive or dismissive of sexual

safety concerns; rather, it reflects a protective and ethically oriented stance in which restraint, responsibility, respect, and caution are all valued. This pattern is important because attitudes often shape whether adolescents see sexual safety behaviors as morally acceptable, personally relevant, and socially defensible within their cultural environment.

In relation to abstinence, the findings show a strong endorsement of waiting until one is ready, as reflected in the median of 3.40 and in qualitative expressions such as “I have my own law: no sex at this age” and “abstinence is safest.” This suggests that many students continue to frame abstinence as a legitimate and protective choice. Such a result is consistent with earlier Philippine evidence showing that young people in urban settings may still hold conservative views about premarital sexual activity and place a high value on sexual restraint (Lacson et al., 1997). Rather than indicating resistance to sexuality education, however, this finding may be interpreted as evidence that abstinence remains one meaningful protective attitude within the students’ moral framework. In this sense, the present result is aligned with the view that adolescent attitudes are shaped not only by health knowledge but also by cultural norms, social expectations, and the perceived consequences of sexual decision-making.

At the same time, the results also reveal that students do not reject contraception outright. The median of 3.37 for the statement that using contraception shows responsibility rather than immorality, together with qualitative codes such as “good practice but for big decisions” and “good but can be misused,” suggests a pattern of conditional acceptance. Students appear to recognize contraception as a responsible protective option, yet this acceptance is moderated by caution, moral seriousness, or concern about misuse. This is a notable finding because it points to a more nuanced attitude structure than a simple abstinence-versus-contraception divide. Instead, the respondents seem to hold both positions simultaneously: abstinence is viewed as safest, but contraception is still recognized as legitimate in the context of responsible decision-making. This pattern is broadly consistent with the literature cited in the Introduction, which suggests that adolescents’ attitudes toward sexual health are shaped by social norms and that favorable views toward protective behaviors may coexist with hesitation, caution, or moral reservation. The finding also supports the broader premise of comprehensive sexuality education that sexuality education should not be framed as encouraging sexual activity, but as equipping learners to understand and evaluate protective choices in age-appropriate and context-sensitive ways (Barriuso-Ortega et al., 2024; UNESCO, 2018).

The strongest attitudinal finding in Table 2 concerns consent. Students registered very high agreement on respecting “No” (Median = 3.84) and on the shared responsibility of both sexes in sexual decision-making (Median = 3.71). The corresponding qualitative codes which are “mutual decision,” “foundation of trust,” and “harassment if forced”, show that respondents understand consent not only as a rule, but as a relational principle grounded in respect, reciprocity, and non-coercion. This is a significant strength because it indicates that students’ attitudes extend beyond factual awareness and reflect a moral orientation supportive of healthy and respectful relationships. The result is consistent with

the literature in the Introduction emphasizing that contemporary sexuality education should include not only reproductive health topics but also consent, boundaries, and respectful interpersonal conduct (Barriuso-Ortega et al., 2024; UNESCO, 2018). In this regard, the findings suggest that learners are receptive to consent-centered instruction and may already possess an attitudinal foundation upon which more applied discussions of communication, coercion, and digital boundaries can be built.

A similarly favorable pattern is evident in students' attitudes toward digital security. The medians for protecting personal photos and messages (3.78) and recognizing that sharing private information can affect relationships (3.67) indicate strong appreciation of privacy, caution, and the consequences of oversharing. The qualitative evidence which are "don't overshare," "risk of exposure," and "privacy matters", further confirms that respondents see digital conduct as an important aspect of sexual safety rather than a separate concern. This finding aligns closely with the literature cited in the Introduction, which emphasizes that adolescents increasingly navigate sexual health and relationships within digital environments and that these spaces shape both information-seeking and vulnerability to risk (Allsop, 2024; Freeman et al., 2023). While Objective 1 showed that students already possess strong digital risk awareness at the knowledge level, the current findings demonstrate that such awareness is also reflected in their attitudes. This is particularly important because digital caution is not merely a technical skill but also an evaluative stance, one that may protect students from privacy breaches, exploitation, and misinformation.

Table 2 presents an attitude profile that is both protective and developmentally promising. The respondents strongly value abstinence, support consent and shared responsibility, and demonstrate respect for digital caution, while also showing a measured openness to contraception as a responsible health practice. These findings are generally consistent with earlier Philippine evidence on conservative sexual values (Lacson et al., 1997), but they also suggest a broader and more contemporary orientation in which protective choices are not limited to abstinence alone. In this sense, the results do not contradict the literature; rather, they refine it by showing that adolescents in this urban public school context may hold layered attitudes that combine conservative moral framing with growing acceptance of responsibility-based and rights-based perspectives on sexual safety. The findings also complement the literature in the Introduction showing that adolescents' views are shaped by the intersection of culture, media exposure, and social context, especially in an environment where digital platforms increasingly mediate information and norms (Allsop, 2024; Freeman et al., 2023).

From an educational standpoint, these attitudes represent a significant asset for the proposed sex education guide. Because students already endorse many of the core values associated with sexual safety which are respect, responsibility, privacy, and caution, the challenge is less about overcoming hostility and more about deepening reflection, clarifying ambiguity, and helping students translate positive attitudes into informed judgment and protective behavior. The cautious acceptance of contraception, for example, suggests that instruction should address not only factual information but also the fears, moral reservations, and social meanings attached to contraceptive use.

Likewise, the strong endorsement of consent and digital safety indicates that these areas can be developed through applied, scenario-based, and participatory learning strategies rather than introductory persuasion. Overall, the findings imply that the research locale is attitudinally prepared for a contextualized, youth-centered, and values-sensitive sexuality education program that affirms protective beliefs while expanding students' capacity for critical and responsible decision-making.

Objective 3: Identify students' practices and information-seeking behaviors related to sex, relationships, and reproductive health

Table 3 shows that the respondents' practices and information-seeking behaviors are shaped by a combination of school exposure, digital searching, peer exchange, and relatively limited adult consultation. The convergence of quantitative and qualitative findings indicates that many students are not passive recipients of information; rather, they actively seek sexual health content through seminars, online platforms, and informal social networks. At the same time, the findings reveal an important imbalance: while access-seeking behavior is high, the ability or willingness to rely on trusted, adult-mediated, or clearly credible sources remains more limited. This pattern suggests that the students' practices are characterized more by initiative and availability than by structured guidance or source certainty. In effect, the respondents appear motivated to seek information, but the pathways through which they do so are uneven in quality and support.

In relation to safe sexual practices, the results show that 74.3% of respondents reported having attended a reproductive health seminar or related activity, supported by qualitative codes such as "seminars help," "use condoms," and "avoid risky situations." This indicates that a substantial proportion of students have already encountered formal or semi-formal sexuality education through school- or community-based programming. Such exposure is important because it suggests that the research locale is not beginning from zero; rather, students have had some level of organized contact with sexual health messaging and preventive content. This finding is broadly consistent with the literature emphasizing that school-based sexuality education remains a key access point for adolescents, particularly when it is responsive to their developmental realities and practical concerns (Barriuso-Ortega et al., 2024; UNESCO, 2018). However, attendance in itself does not necessarily guarantee depth, retention, or application. As such, the current result may be interpreted as evidence of reach, but not yet sufficient proof of full instructional effectiveness.

The strongest behavioral pattern in the table concerns students' reliance on digital and social sources. A very high proportion of respondents reported searching online for sexual health information (86.2%), yet only 48.1% indicated that they knew a trusted site or application. This contrast is particularly significant. It shows that students are highly active information seekers, but many may still lack confidence or skill in identifying which digital sources are reliable. The qualitative evidence which Are "Google/TikTok/ChatGPT/YouTube" and "trusted sites/apps", reinforces this interpretation by showing that students navigate a broad digital ecosystem in which convenience and accessibility may precede careful source evaluation. This result is

closely aligned with the literature cited in the Introduction. Silva et al. (2024) found that adolescents commonly use the internet and peers as major sources of sexual health information, while Pleasants et al. (2024) showed that adolescents and young adults do not always receive information from the sources they most prefer or trust. Likewise, Allsop (2024) and Freeman et al. (2023) emphasized that digital environments shape not only access to information but also judgments of credibility, often in ways that leave adolescents vulnerable to misinformation. In this sense, the present finding is consistent with prior studies showing that high digital engagement does not automatically translate into high digital literacy.

Another notable pattern in Table 3 is the limited use of adult-based communication channels. Only 32.9% of students reported talking to a teacher, and only 25.2% reported discussing sexual health matters with parents, compared with 48.6% who reported asking friends. Meanwhile, 22.4% reported using anonymous question-and-answer formats. These figures suggest that, although adults remain potential sources of information, students are more likely to turn to peers than to parents or teachers when dealing with sexual health concerns. The preference for peers, combined with the modest use of anonymous channels, also implies that adolescents may value relatability and privacy when seeking sensitive information. This pattern is strongly consistent with the literature presented in the Introduction. Silva et al. (2024) noted that adolescents often rely on family, peers, school, and the internet in different combinations, but not always with equal confidence. Pleasants et al. (2024) similarly showed that source preference and actual source use often diverge. The current findings suggest that, in this research locale, adult sources may be available but are not yet the most accessible, comfortable, or trusted first option for many students.

Table 3 presents a practice profile marked by active seeking but uneven mediation. Students are exposed to seminars, frequently search online, and consult peers, yet fewer are anchored to trusted digital sources or to consistent adult guidance. This pattern is highly consistent with the broader literature, which portrays adolescent sexual health information behavior as increasingly decentralized, digitally mediated, and socially filtered. The present findings do not contradict previous studies; rather, they localize them. Like the studies cited in the Introduction, this research shows that adolescents are willing to seek information, but the channels they use are not always the most credible or developmentally protective. The result therefore strengthens the argument that the challenge is no longer merely whether adolescents are informed, but how they are informed, by whom, and under what conditions of trust, privacy, and credibility.

From an educational standpoint, these findings carry clear implications for the proposed sex education guide. Since students are already actively searching for information, interventions should not focus only on motivating inquiry; they should also strengthen the quality of inquiry. In particular, the gap between high online searching and lower awareness of trusted sources suggests a need to embed digital literacy, source verification, and guided navigation of credible sexual health platforms into the module. Likewise, the relatively low levels of communication with teachers and parents suggest that the guide should include strategies for building safer and less judgment-laden

channels of adult engagement, while also recognizing the value students place on privacy and anonymity. The use of anonymous Q&A by a subset of students is especially instructive, as it suggests that confidential and low-risk formats may increase participation. Overall, the findings imply that an effective contextualized sexuality education program must not only provide content, but also reshape the information environment in which adolescents search, ask, verify, and decide.

Objective 4: Determine the barriers and enabling factors that influence students' access to accurate sexual health information and services

Table 4 shows that students' access to accurate sexual health information and services is shaped by a tension between persistent stigma and the presence of some trusted support structures. The convergence of quantitative and qualitative findings suggests that respondents do not face a complete absence of support; rather, their access is filtered by embarrassment, fear of judgment, and uncertainty about where and how to seek help safely. At the same time, the findings indicate that approachable health workers and trusted clinic privacy function as meaningful enabling factors. Taken together, these results suggest that access is not determined solely by the physical availability of information or services, but by whether adolescents perceive those spaces as respectful, confidential, and emotionally safe. This pattern is important because it shows that the problem is not only informational but also relational and environmental.

The strongest barrier identified in Table 4 is social and cultural stigma. The median score for being worried about being judged if one asks about sexual health concerns (Median = 2.73), together with qualitative codes such as "embarrassment," "fear of being judged," and "minor status," indicates that students continue to associate help-seeking with social risk. This suggests that many adolescents may hesitate to raise questions not because they lack interest or need, but because they anticipate criticism, shame, or dismissal. The mention of "minor status" is especially revealing, as it implies that some students feel their age limits their legitimacy in asking about sexual and reproductive health matters. This finding is highly consistent with the literature cited in the Introduction. Corley et al. (2022) found that fear of judgment, poor privacy practices, and provider bias can significantly discourage young people from seeking sexual and reproductive health care. Likewise, Dela Luna et al. (2024) showed that stigma and service-level hesitation continue to weaken program implementation in the Philippine setting. In this respect, the present finding localizes a broader pattern already noted in the literature: adolescents may know that information and services exist, yet still avoid them because the social cost of asking feels too high.

At the same time, Table 4 also identifies important enabling conditions. The median scores for health workers being approachable (Median = 3.13) and clinic privacy being trusted (Median = 3.23) suggest that students do recognize certain formal support structures as relatively safe and reliable. These results indicate that adolescents are not universally distrustful of adult or institutional sources. Rather, they appear responsive to settings where confidentiality is protected and where adults are perceived as approachable rather than judgmental. This is a meaningful finding because it shows that

trust can be built and that service accessibility is not solely a matter of location or availability, but also of interpersonal quality and privacy assurance. The result closely aligns with Corley et al. (2022), who emphasized privacy and confidentiality as central to youth-friendly care. It also supports the broader argument in the Introduction that adolescents are more likely to engage with sexual health services when these are delivered in ways that reduce shame and affirm safety. In this sense, the findings do not simply identify barriers; they also point to the characteristics of services that adolescents are more willing to use.

A further concern reflected in Table 4 is the presence of educational gaps that may limit students' comfort in seeking guidance from adults within their immediate environment. The medians for comfort asking teachers (Median = 2.60) and comfort asking parents (Median = 2.80) suggest only moderate levels of comfort, rather than strong confidence, in these two major sources of support. The qualitative codes which are "lack of sex ed," "confusing terminologies," and "informal teaching", reinforce the interpretation that access problems are not only emotional but also pedagogical. Students may struggle to seek support when sexuality education is insufficiently structured, when language is unclear, or when adults discuss these issues inconsistently or indirectly. This result is consistent with the literature reviewed in the Introduction, which noted that adolescents draw information from multiple sources, including family, school, and the internet, but do not always experience these sources as equally accessible or useful (Pleasants et al., 2024; Silva et al., 2024). The relatively modest comfort levels for teachers and parents also complement the findings in Objective 3, where students showed greater reliance on peers and online sources than on adults. Together, these results suggest that adult guidance exists as a potential resource, but not yet as a fully comfortable or dependable first-line option for many students.

Table 4 presents a pattern in which access is constrained less by total absence of information than by the conditions under which information and services are offered. Students appear to live within an environment where stigma remains present, communication with adults is not fully easy, and formal instruction may still leave areas of uncertainty. At the same time, they also recognize that supportive health workers and private clinical settings can reduce these barriers. This overall pattern is strongly consistent with the literature already discussed in the Introduction. Corley et al. (2022) emphasized that privacy and provider attitudes shape whether young people feel safe seeking care, while Dela Luna et al. (2024) showed that implementation gaps and stigma continue to affect adolescent reproductive health access in the Philippines. Older Philippine evidence on conservative sexual norms (Lacson et al., 1997) also helps explain why embarrassment and fear of judgment remain influential. Thus, the present findings neither depart from nor oversimplify previous studies; instead, they demonstrate how these internationally and nationally recognized barriers operate within one localized senior high school context.

From an educational and programmatic standpoint, these findings carry direct implications for the proposed contextualized sex education guide. Since stigma and discomfort continue to limit access, the guide should not only provide factual content but

also normalize help-seeking, clarify where safe support may be obtained, and reduce the shame associated with asking questions about sexual health. The relatively stronger trust in health workers and clinic privacy suggests that partnerships with adolescent-friendly health personnel may be especially valuable in school-based interventions. Meanwhile, the moderate comfort levels in asking teachers and parents indicate a need to strengthen adult communication practices, including clearer terminology, more structured instruction, and nonjudgmental engagement. Overall, the findings imply that effective sexuality education must be designed not simply to inform adolescents, but to create conditions in which they can ask, verify, and seek support without fear. In this sense, improving access means addressing both the content of education and the emotional climate in which that education is delivered.

Objective 5: Gather student preferences on the content and delivery of a school-based sex education module that is age-appropriate, culturally relevant, and responsive to their needs

Table 5 shows that students prefer a sex education program that is practical, interactive, confidential, and responsive to their developmental and social realities. The convergence of quantitative and qualitative findings indicates that respondents are not merely asking for more information, but for a different kind of learning experience, one that emphasizes usable skills, active participation, relevant examples, and emotional safety. Taken together, these findings suggest that students want sexuality education to move beyond abstract warnings or purely lecture-based delivery and toward a more applied, student-centered, and context-sensitive format. This pattern is especially important because it demonstrates that learners themselves are able to articulate what makes sexual health instruction meaningful, credible, and usable in their everyday lives.

The strongest pattern in the table concerns students' preference for comprehensive and skills-based content. The median score for the statement that sex education should focus on practical skills, such as condom use and saying "no" (Median = 3.47), together with qualitative codes such as "contraception," "consent," "STI/HIV," "puberty," "online safety," and "consequences of unsafe sex," indicates a clear desire for breadth combined with practical applicability. Students appear to prefer a curriculum that addresses core domains of adolescent sexual safety in an integrated way rather than treating them as isolated topics. More importantly, the emphasis on "practical skills" suggests that respondents do not want sexuality education to remain purely informational; they want instruction that helps them act, decide, communicate, and protect themselves in real situations. This finding is strongly consistent with the literature cited in the Introduction. UNESCO (2018) emphasized that comprehensive sexuality education should be age-appropriate, evidence-informed, and skills-based, while Barriuso-Ortega et al. (2024) found that sexuality education programs are more effective when they are structured around meaningful learning outcomes and participatory engagement rather than passive information delivery. In this respect, the present findings directly support the principle that effective school-based sex education must develop both knowledge and applied competence.

A second important pattern is the students' preference for interactive and student-centered learning approaches. The median score indicating that interactive activities are more helpful than lectures (Median = 2.91), along with qualitative codes such as "digital modules," "peer-led," "Q&A," "small groups," and "role-play," suggests that respondents value learning environments where they can participate actively, ask questions, and engage with content in more relatable and less intimidating ways. Although the median is not as high as the scores for confidentiality or practical content, it still reflects a meaningful preference for active learning over traditional one-way instruction. This result is important because it suggests that the effectiveness of sex education may depend not only on what is taught but also on how it is taught. The preference for peer-led and discussion-based formats may also reflect the findings in Objective 3, where students showed substantial reliance on peers and informal information channels. In this sense, interactive learning may not simply be a pedagogical preference; it may also correspond to the social ways in which adolescents already process sensitive information. This pattern is again consistent with the literature in the Introduction, particularly the view that sexuality education is more effective when it is participatory and responsive to learners' actual information environments (Barriuso-Ortega et al., 2024; UNESCO, 2018).

The third major pattern in Table 5 concerns the need for contextualized and supportive learning conditions. Students gave a high median to the importance of confidentiality (Median = 3.60), and they also expressed support for involving parents in selected parts of the program (Median = 3.24). The qualitative codes—"real-life examples," "age appropriate," "safe space," and "involve parents selectively"—further clarify that students want a program that is not only informative, but also emotionally safe, realistic, and developmentally calibrated. The strong preference for confidentiality is especially significant because it aligns closely with the barriers identified in Objective 4, where stigma and fear of judgment limited help-seeking. Students appear to understand that sexuality education is most useful when it occurs in an environment where they can ask questions without embarrassment or exposure. At the same time, their support for selective parental involvement suggests that they do not necessarily reject the role of parents, but prefer that such involvement be carefully balanced rather than imposed indiscriminately. This reflects a nuanced preference structure: adolescents want support from adults, but in ways that preserve privacy, autonomy, and comfort. These findings are consistent with the literature cited in the Introduction, which emphasized that adolescent access to sexual health information is strongly shaped by trust, confidentiality, and the social conditions under which help is sought (Corley et al., 2022; Pleasants et al., 2024; Silva et al., 2024).

Table 5 presents a preference profile that is highly coherent with the results of the previous objectives. The students' desire for practical content corresponds to the knowledge gaps identified in Objective 1, particularly in technically specific areas such as emergency contraception, pill adherence, and vaccines. Their preference for interactive formats complements the information-seeking behaviors noted in Objective 3, where students actively searched for information and relied on socially mediated channels. Likewise, their emphasis on confidentiality and safe spaces directly reflects the stigma-related barriers identified in Objective 4. In this sense, the preferences expressed by

students are not disconnected wishes; they are logical responses to the patterns already observed in their knowledge, attitudes, practices, and access experiences. The findings therefore strengthen the study's overall argument that a contextualized sex education guide should be designed not only around what adults believe adolescents need to know, but also around how adolescents themselves say they can best learn, ask, and engage.

The results are also broadly consistent with the literature reviewed in the Introduction. UNESCO (2018) and Barriuso-Ortega et al. (2024) emphasized the value of participatory, age-appropriate, and skills-based sexuality education, which closely matches the students' expressed preferences in this study. The emphasis on digital modules and online safety also reflects the more contemporary concerns noted by Allsop (2024) and Freeman et al. (2023), who argued that digital environments now shape adolescents' sexual health learning and vulnerability in significant ways. Meanwhile, the students' call for confidentiality and selective adult involvement aligns with Corley et al. (2022), who highlighted privacy and provider attitudes as central to youth-friendly sexual health support. Thus, the present findings do not depart from prior scholarship; rather, they localize and concretize it within one public senior high school context. They show that the principles identified in international and national literature are indeed relevant at the school level, but must be translated into forms that students experience as safe, practical, and realistic.

From an educational and programmatic standpoint, these findings provide a strong basis for the proposed contextualized sex education guide. The guide should be comprehensive in scope, but structured around practical competencies rather than information overload. It should use interactive and student-centered strategies, such as guided discussion, scenario-based learning, peer-supported activities, role-play, and carefully designed digital modules. It should also protect confidentiality, use age-appropriate and culturally sensitive language, and involve parents in calibrated ways that support rather than inhibit participation. Overall, the findings suggest that students are not resistant to sex education; rather, they are asking for a form of sexuality education that respects their realities, addresses their actual questions, and creates a safe environment for learning. In this sense, Table 5 provides not only descriptive evidence of preference, but also a concrete design direction for a more responsive and effective school-based sex education program.

Conclusions

Based on the findings of the study, it is concluded that senior high school students in the research locale possess a generally strong but uneven level of knowledge on pregnancy prevention, STIs/HIV, consent, and digital safety. Students demonstrated solid understanding of core concepts such as condom use, HIV transmission, mutual consent, and the risks associated with unsafe online behavior. However, this knowledge was not fully comprehensive, as notable misconceptions remained in more technical and less frequently discussed areas, particularly emergency contraception, daily contraceptive pill adherence, HPV vaccine protection, and myths about HIV transmission through casual contact. Thus, the first research question may be answered by stating that adolescents

are knowledgeable about the fundamentals of sexual safety, but important gaps persist in specific areas requiring more precise and corrective instruction.

The study further concludes that students hold generally favorable and protective attitudes toward adolescent sexual safety. They strongly endorsed abstinence as a legitimate protective choice, expressed cautious but positive acceptance of contraceptive use as a form of responsibility, and showed firm support for consent as mutual respect and shared responsibility. They also demonstrated high regard for digital privacy and security. These findings indicate that students' attitudinal orientation is not permissive, but rather protective, ethically grounded, and receptive to responsible sexual health education. In response to the second research question, the study concludes that students' attitudes are broadly aligned with values that support safe, respectful, and informed decision-making.

With respect to practices and information-seeking behaviors, the study concludes that students are active seekers of sexual health information, but their information pathways are uneven in credibility and support. Many students had attended reproductive health seminars and frequently searched for information online, yet fewer were able to identify trusted digital sources. Peer consultation was more common than communication with teachers or parents, while anonymous channels were used by a smaller subset of learners. These findings answer the third research question by showing that adolescents are willing to seek information, but they often do so through informal, socially mediated, or digitally convenient channels rather than through structured, adult-guided, or clearly credible sources.

In relation to barriers and enabling factors, the study concludes that access to sexual health information and services is shaped by a persistent tension between stigma and trust. Embarrassment, fear of judgment, and discomfort associated with asking sensitive questions continue to constrain students' help-seeking behaviors. At the same time, approachable health workers and confidence in clinic privacy function as important enabling conditions. Moderate comfort in asking teachers and parents further suggests that the accessibility of support is influenced not only by availability, but also by emotional safety, communication style, and perceived confidentiality. Thus, in answer to the fourth research question, the study concludes that adolescents' access is limited less by the total absence of support than by the social and relational conditions under which such support is offered.

Additionally, students prefer a sex education program that is practical, interactive, confidential, age-appropriate, and context-responsive. They favor instruction that emphasizes applied skills, such as refusal skills, condom use, and real-life decision-making, rather than abstract or purely lecture-based content. They also prefer interactive delivery formats, including small-group discussions, role-play, peer-supported activities, question-and-answer formats, and digital modules. At the same time, students strongly value confidentiality and safe spaces, while supporting parental involvement only in selected and carefully calibrated aspects of the program. In answer to the fifth research

question, the study concludes that adolescents want sexuality education that is not only informative, but also usable, participatory, and psychologically safe.

Overall, the study concludes that adolescents in this urban public senior high school context possess strong foundational knowledge, protective attitudes, active information-seeking behaviors, and clear preferences for responsive sexuality education, yet they continue to face important gaps in technical understanding, source credibility, and safe access to support. These findings affirm the need for a localized, youth-centered, and stigma-sensitive sex education learning guide that deepens existing knowledge, corrects persistent misconceptions, strengthens digital literacy, promotes respectful and informed decision-making, and creates supportive conditions for help-seeking. In this regard, the study demonstrates that effective school-based sexuality education must move beyond awareness alone and toward a more applied, contextually grounded, and learner-responsive model of adolescent sexual safety education.

Recommendations

In light of the findings, it is recommended that a contextualized, school-based sex education learning guide be developed and implemented to address the specific knowledge gaps, attitudinal strengths, information-seeking patterns, barriers, and learner preferences identified in this study. The proposed guide should prioritize the weakest areas of student understanding, particularly emergency contraception, daily contraceptive pill adherence, HPV vaccine protection, and misconceptions regarding HIV transmission through casual contact. These topics should be presented through age-appropriate, culturally sensitive, and learner-friendly lessons that use clear language, myth-versus-fact activities, and applied examples to correct misinformation and deepen understanding.

It is further recommended that the guide adopt a skills-based and interactive instructional design rather than a purely lecture-centered approach. Consistent with the preferences expressed by students, the learning guide should incorporate scenario-based learning, role-playing, guided discussions, peer-supported activities, small-group engagement, and question-and-answer mechanisms, including anonymous formats where appropriate. These strategies may strengthen not only knowledge acquisition but also students' confidence in applying sexual safety concepts to real-life situations involving consent, decision-making, contraception, and online behavior.

Given the strong influence of digital platforms on students' information-seeking practices, the guide should also include a digital sexual health literacy component. This component should help students identify credible online sources, evaluate the reliability of social media and internet-based content, and protect their privacy and safety in digital spaces. In particular, instruction should address the risks of oversharing, online coercion, exposure of intimate content, and misinformation from unverified sources. Embedding digital literacy in the module is necessary to bridge the gap between frequent online searching and limited awareness of trusted digital resources.

To improve the learning environment, schools are encouraged to establish confidential, stigma-sensitive, and adolescent-responsive mechanisms for discussing sexual health. Anonymous question boxes, safe-space discussions, referral systems, and structured health education sessions may help reduce embarrassment and fear of judgment, which emerged as major barriers in the study. In parallel, parental involvement should be calibrated carefully. Parents may be engaged in selected aspects of the program, particularly those related to communication, guidance, and value formation, while still respecting adolescents' need for privacy and autonomy in sensitive discussions.

The findings also suggest the need for capacity-building among teachers and school-based health personnel. Teachers should be provided with training on how to facilitate sexuality education in ways that are accurate, nonjudgmental, developmentally appropriate, and responsive to student concerns. Likewise, school health workers and partner health professionals should be supported in delivering confidential, youth-friendly, and trustworthy services. These efforts are essential in creating a school climate where students feel safe seeking information and support.

As an intervention output of the present study, it is recommended that the proposed contextualized sex education learning guide be pilot-tested in actual classroom settings. This may be undertaken through action research or implementation-based evaluation to determine its acceptability, usability, and effectiveness in improving students' knowledge, attitudes, and protective decision-making. The results of such implementation may guide further refinement of the module prior to wider adoption.

Future research is likewise recommended. Similar studies may be conducted using larger samples, multiple schools, or different geographic contexts, particularly rural and semi-urban settings, to determine whether the patterns observed in this study are consistent across other adolescent populations. Comparative studies may also examine differences by sex, strand, age group, or type of school in order to generate more nuanced evidence for targeted interventions. In addition, longitudinal studies are recommended to examine how students' knowledge, attitudes, and practices change over time and whether school-based interventions produce sustained effects.

Further research may also include the perspectives of parents, teachers, and health workers to provide a more comprehensive understanding of the broader support system influencing adolescent sexual safety. Since some of the present findings reflect a tension between student initiative and limited adult engagement, future inquiry may explore the reasons behind adolescents' lower comfort in approaching teachers and parents, as well as the institutional and cultural factors that shape this pattern. Such studies may help clarify how to strengthen home-school-health partnerships in sexuality education.

Overall, it is recommended that the present findings be translated into concrete school policies, instructional materials, and adolescent-friendly support mechanisms rather than remain solely within academic discourse. By doing so, the study may contribute to the development of a more responsive and evidence-based sexuality

education framework that not only corrects misconceptions, but also empowers adolescents to make informed, safe, and responsible decisions in both offline and digital contexts.

Compliance with Ethical Standards

The author affirms that this study was conducted in full accordance with established ethical standards for research involving human participants. Informed consent was obtained from all respondents prior to participation; for minors, parental or guardian consent and participant assent were likewise secured. Participation was entirely voluntary, and respondents were informed of their right to withdraw at any stage without penalty or adverse consequence. Given the sensitive nature of the topic, data collection was carried out in a respectful, non-coercive, and nonjudgmental manner to safeguard participants' dignity, welfare, and psychological well-being. When necessary, guidance support was made available for respondents who might experience discomfort during the study. Confidentiality and anonymity were strictly maintained throughout the research process. All data were securely stored, protected in accordance with data privacy principles, and used exclusively for academic and research purposes. No personally identifiable information was disclosed in the reporting of findings. Prior approval to conduct the study was obtained from the appropriate school authorities before data collection commenced.

The author further declares that no conflict of interest influenced the design, conduct, analysis, interpretation, or reporting of the study. Plagiarism was strictly avoided, and all sources were properly cited and acknowledged. The findings were interpreted and reported with scholarly objectivity, and no data were fabricated, falsified, or selectively presented to misrepresent the results. Where artificial intelligence (AI) tools were used, such use was limited to editorial assistance, language refinement, and improvement of presentation. Full responsibility for the accuracy, analysis, interpretation, and integrity of the manuscript remained solely with the authors.

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