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Perceptions and Experiences of Adolescents and Health Cadres Regarding Risky Sexual Behaviors Causing Sexually Transmitted Infections in Adolescents: A Qualitative Study

Wiwit Kurniawati[1*], Imami Nur Rachmawati[2], Siti Rahmawati[2], Syamsuriati[2], Safitriana[2], Nurlela Lantu[2], Navira Chairunisa[2], Cluny Martina Mangkuayu[2]

[1]*Department of Maternity Nursing, University of Indonesia, Depok, West Java, Indonesia*
[2]*Maternity Nurse Specialist Study Program, Faculty of Nursing, University of Indonesia, Depok, West Java, Indonesia*
***Correspondence**: *wiwit.k@ui.ac.id*

Abstract:
Sexually transmitted infections (STIs) are one of the most common women's health challenges among adolescents. This study aims to explore adolescents' and cadres' experiences regarding risky sexual behaviors that can cause sexually transmitted infections using a qualitative approach. The research method used FGD with 40 adolescents aged 10–19 years and 23 health cadres who were selected purposively in Karet Kuningan Village. Interviews with FGD were recorded and then made into interview transcripts and analyzed using Colaizzi's strategy. The results of the study have identified five themes, namely (1) participants' perceptions and experiences of STIs as diseases caused by free sexual activities and changing partners, (2) efforts to avoid contracting STIs are to maintain socializing, personal hygiene, not having free sexual intercourse, maintaining food, and conducting regular check-ups, (3) information support obtained from social media and health workers (4) The perceived obstacles are adolescents' low self-awareness and shy, afraid, and unfriendly attitude of health workers; (5) the needs of participants are the existence of intensive health counseling and health center services involving cadres and parents of adolescents. The results of this study provide useful information in determining policy making, program design, and nursing interventions to prevent the increase in STIs in adolescents. The next research is expected to conduct intervention research by involving parents and community leaders and in accordance with the needs and desires of adolescents with renewable technology approaches such as digitalization and applications.

Keywords: *sexually transmitted infections, adolescents, cadres, reproductive health, qualitative*
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INTRODUCTION

Sexually transmitted infections (STIs) are one of the reproductive health problems that can be transmitted through sexual intercourse, transmission from mother to fetus in the womb or at birth, transfer of infected tissues or blood products, and the use of medical devices. The causes of STIs can be grouped according to their causes, namely parasites, fungi, protozoa, viruses, and bacteria. STIs can also be transmitted through other types of pathogens through sexual intercourse (Brunelli et al., 2022). This disease is one of the most dangerous, contagious, and ever-increasing reproductive health problems globally. WHO (2019) states that the high maternal mortality rate globally is caused by adolescent reproductive health problems such as increasing cases of HIV transmission and sexually transmitted infections in adolescents (WHO, 2019). WHO data (2021) shows that there are more than 1

million cases of sexually transmitted infections due to chlamydia, gonorrhea, syphilis, and trichomoniasis. Eight million cases of syphilis, 500 million people aged 15-49 years infected with herpes simplex, 311,000 deaths due to human papillomavirus (HPV) infection, and 1.1 million women infected with syphilis (World Health Organization, 2021). The prevalence of STIs in adolescents in Indonesia in 2024 shows 8,984 cases of syphilis, 35,415 new cases of HIV, and 12,481 cases of AIDS (Ministry of Health, 2024).

STIs in adolescents result in losses both physically and psychologically. The physical impact experienced by adolescents is an infection of the reproductive organs that can result in inflammation, swelling, and pain. Symptoms of STIs, such as lumps, itching, urinary pain, and sores, cause long-term discomfort. Poorly managed STIs can result in serious complications such as cancer, ectopic pregnancy, infertility, and pelvic inflammatory disease, as well as an increased risk of HIV (Cannovo et al., 2024). The social and psychological impact of reproductive health problems in adolescents with sexually transmitted diseases is loss of self-esteem, regret, loss of family support, depression, stress, anxiety, substance abuse, narcotics, and suicidal ideation (Teferi Mengistu et al., 2022) (Risniawan & Handayani, 2021).

Some of the factors that affect STIs in adolescents include social and environmental factors such as free will, sexual violence and harassment, unemployment, and poverty, as well as low environmental and family roles. Lack of knowledge and information about STIs, limited access to reproductive health information and services, stigma, and risky sexual behaviors (unprotected sexual intercourse, changing partners, oral and anal sex, and use of narcotics and alcohol) (Ikawati & Saleh, 2023). Adolescents who have lived in risky environments since childhood, such as environments with high drug use, prostitution, low levels of family and environmental concern for reproductive health, and environments with violent cases, are at greater risk of sexually transmitted diseases (Green et al., 2019). This is in line with the results of other studies that state that adolescents' perception of promiscuous sex behavior is influenced by several things, one of which is the location of residence. Teenagers who are used to seeing sexual activity freely will think that it is normal and not wrong (Prakasita et al., 2022). Adolescents are at risk of sexually transmitted diseases due to risky behaviors such as changing sexual partners (Lu et al., 2020).

In the region, Africa's leading cause of sexually transmitted diseases among adolescent girls is adolescent sexual activity from an early age, contact with multiple men or sex partners, sexual intercourse with older men, and not using condoms during sexual intercourse, as well as exposure to print, radio, and television media that display sexual activity freely (Cort et al., 2023).

In addition to these factors, the lack of mentoring and direction from parents is the main cause of reproductive health problems for adolescent girls. The study is in line with the results of a study conducted in the United States that maternal detention, or the condition of adolescent girls with incarcerated mothers, is associated with an increase in HIV cases or sexually transmitted infections (Zhao et al., 2023). The condition of imprisoned mothers causes young women to become free to use drugs and engage in risky sex activities. Parents have an important role in giving direction to young women to go through their life phases because inappropriate parenting from parents will have an impact on the occurrence of HIV/AIDS risk behaviors in adolescents (Kurniyawan et al., 2023). *Sexually Transmitted Diseases* (STDs) in adolescent girls in Papua are caused by promiscuity, the influence of peers who want freedom, uncontrolled feelings of affection and mutual love for the opposite sex, the impact of premarital sex, dishonesty of adolescent girls with their parents due to poor communication, and lack of knowledge among adolescent girls about sexually transmitted diseases (Elvina et al., 2022).

Another study states that the prevention of sexually transmitted infections in adolescents is not optimal due to the influence of adolescents who receive negative/bad influences from their peers. In addition, the large number of immigrant communities that come to the neighborhood where they live has a great influence on sexual behavior carried out by the local community. Free sex by teens is considered normal, not taboo, and teenage parents tolerate this (Septarini et al., 2019).

The results of the research conducted to improve the quality of reproductive health of adolescent girls are by providing health-related information, including information on sexually transmitted diseases

and HIV (Bahar et al., 2023). Another study states that using internet-based sexuality education packages like "*You and Me*" can also be used as an alternative in providing education because it has a positive effect on sexual knowledge and sexual attitudes among young women in vocational schools in Guangdong and Yunnan Vocational Schools, China (Hu et al., 2022).

Improving the reproductive health of adolescent girls can also be done by using *Crush* is a mobile application aimed at improving sexual health by promoting the use of SRH services (*sexual and reproductive health)* and contraception among U.S. adolescent girls (14-18 years old) that have been shown to be effective in improving knowledge, attitudes, and *self-efficacy* of adolescent women in preventing the transmission of sexually transmitted diseases (García et al., 2023). Use of school-based peer education interventions with booklets, *flipchart*s, and posters with content focused on the recognition of female and male intimate organs, the development of sexual negotiation skills, and knowledge about pregnancy, contraception, and sexually transmitted diseases has been shown to be effective in increasing adolescents' knowledge and awareness in maintaining their reproductive health (Wondimagegene et al., 2023).

The resolution of reproductive health problems in adolescent girls must be carried out in an appropriate and comprehensive manner. This is in accordance with the results of the study, which state that the strategy of providing reproductive health education to adolescents must be carried out in accordance with the needs of adolescents, looking at the right momentum, health education materials are provided comprehensively and packaged in a sharing manner, adolescents are positioned as interpersonal communication partners, and it is carried out with an interpersonal communication approach (Solihin et al., 2023).

The research is in accordance with the results of a study in Zambia, which states that comprehensive sexuality education (CSE) combined with the provision of sexual and reproductive health services by responsive and receptive health workers in schools has been shown to be effective in reducing early pregnancy and the spread of HIV among adolescent girls in Zambia (Mbizvo et al., 2023). In addition to providing reproductive health education to improve adolescent reproductive health, it can also be done by providing support and support to adolescents so that adolescents feel well treated, loved, and not lacking in affection so that adolescents do not seek an escape from love for their lover (Pertiwi, 2020).

Ways to improve communication between young women and parents or families can be done by using *Linking Families and Teens* (LiFT). This study has been shown to be effective in improving adolescent communication with parents, improving adolescent girls' self-efficacy, sexual health knowledge, and skills, and reducing unwanted teenage pregnancies in Alaska, California, Hawaii, Idaho, Mississippi, New York, Oregon, Utah, and Washington (Brown et al., 2021). Improving adolescent reproductive health can also be done by approaching the peer environment of adolescent girls; this is in accordance with research conducted in the Carolinas and New York that by improving social and emotional skills and helping students form supportive peer relationships using the *Peer Group Connection* (PGC-HS) with the *Positive Youth Development* School-based (PYD), it has been shown to be effective in encouraging students to make healthier decisions in friendships and avoid risky behaviors of vaginal sex in high school (Walsh et al., 2022).

Various efforts have been made by government agencies and public institutions in providing health services, including appropriate education to improve adolescent reproductive health, but these efforts have not been able to reduce the problem of sexually transmitted infections in Indonesia. Cooperation from various parties is needed, such as government agencies, public officials, health workers, *stakeholders,* and the youth themselves. This study aims to explore adolescents and cadres' experiences of risky sexual behaviors that can lead to sexually transmitted infections.

METHOD

This study uses a qualitative research design with a focus group discussion method. The study population and sample comprised adolescent boys and girls, as well as health cadres. Participants were selected using purposive sampling techniques, with characteristics aligned with the research objectives.

The participant criteria are adolescents aged 10-19 years in the Karet Kuningan Village area, cadres who are healthy and able to communicate actively, and willing to participate in the research. The research was conducted in the Karet Kuningan Village Area in April 2025. This research uses the basic principles of ethics, namely respect for human dignity, beneficence, and justice. Respect for human dignity by providing autonomy and anonymity. The participant's autonomy will be communicated in writing on the research explanation sheet and explained by the researcher to the participant. The dignity of participants is also upheld by being professional when in contact with them. The principles of beneficence and non-maleficence were communicated to participants through a research explanation sheet. This study also applies the principle of justice by treating all participants equally.

Data collection uses the Focus Group Discussion (FGD) method. The FGD is conducted to explore specific issues related to the topic under discussion. This technique is used to avoid researchers' misinterpretation of the problem under study. The data collection process was carried out by submitting an application for a research ethics test at the Ethics Committee of the Faculty of Nursing, University of Indonesia (letter number of the ethics test FIK UI KET-153/UN2. F12. D1.2.1/PPM.00.02/2025) and take care of research permits in the Karet Kuningan Village area. Qualitative data on FGD results in adolescents were analyzed according to the stages presented by Creswell (2014) in Afiyanti & Rachmawati (2014). These stages include: preparing data, organizing data, reducing data into the form of themes related to the coding process, making summaries of the generated codes, and presenting data in the form of images, tables, or discussion materials.

In the implementation of the directed group discussion (FGD), the researcher uses an open-ended question guide that is prepared based on the results of the literature review and adjusted to the research objectives. The questions were designed to explore participants' perceptions, experiences, and attitudes toward sexually transmitted infections (STIs) and adolescent reproductive health. Some of the key questions used in the guide include: "What do you know about sexually transmitted diseases (STIs)?", "What kind of behavior do you think can cause STIs?", "What are some ways you can avoid contracting STIs?", "Where do you usually get information about reproductive health?", and "What obstacles do you experience in maintaining reproductive health?". This guide is applied flexibly during the FGD process, to provide a space for participants to express their thoughts and experiences in a natural, open, and profound way according to the context of their lives.

The results of the FGD are analyzed in the following stages: making a transcript from the results of the FGD recording, marking and searching for keywords from the existing transcripts, then coding or labeling the theme, creating a theme from the categories of the results of the coding process, providing notes or memos on each category/theme obtained, and interpreting the data from the resulting themes.

The trust and credibility of the results is carried out through the process of examining research members, completing audit trails, and triangulating research strategies. The member checking process involves in-person group meeting discussions to confirm the results and interpretations generated during the first analytical stage with several youth participants and cadres. All analytics decisions can be traced back through an audit trail, which consists of a series of Word documents, and Excel. This process is repeated to ensure the accuracy and validity of our research results. In addition, our analytical strategy is carried out by combining perspectives from different researchers in an effort to ensure the convergence of final interpretations. Data validation is carried out by confirming several statements to certain participants. The validity of the research data is carried out by validating participants directly, and discussing with the research team and experts.

Researcher Position and Reflexivity. The researcher realizes that his background as a lecturer and practitioner in the field of maternity nursing can influence the process of data collection and interpretation. To minimize bias, the researcher conducted self-reflection before, during, and after the FGD process and discussed the transcript results with the research team to achieve an objective interpretation. The researcher also ensured a neutral position during the FGD process by not directing participants' answers and maintaining professional relationships.

RESULTS

Background of participants

Participants in this study consisted of 40 adolescents who were divided into two groups of FGD and 23 cadres who became one group in the FGD. Adolescent participants were adolescents aged 10-19 years who were grouped by age at the time the FGD was conducted. All participants live in the Karet Kuningan sub-district area and are junior and senior high school students and active health cadres.

Thematic outcomes

The results of the analysis identified five themes composed of interrelated categories and categories obtained from the keywords from interviews with adolescents and cadres as shown in table 1.

Table 1. Theme coding tree

Theme	Category
Topic 1 Participants' perceptions and experiences of STIs are diseases caused by free sexual activity and changing partners	Category 1 High-risk sexual behaviors of adolescents Category 2 Sexual harassment Category 3 Transmission of sexually transmitted diseases Category 3 Free sexual activity
Topic 2 Efforts to avoid contracting STIs are to maintain socializing, personal hygiene, not having free sexual intercourse, maintaining food, and conducting regular check-ups	Category 1 Efforts to maintain association Category 2 Efforts to maintain cleanliness Category 3 Not having free sexual intercourse Category 4 Efforts to maintain food consumption Category 5 Health screening efforts
Topic 3 Information support is obtained from social media and health workers	Category 1 Social media Category 2 Support for healthcare workers
Topic 4 The obstacles felt were low adolescent self-awareness, shame, fear, and unfriendly attitude of health workers	Category 1 Awareness from the adolescent self Category 2 Attitude of health workers
Topic 5 The needs of the participants are the existence of intensive health counseling and health center services involving cadres and parents of adolescents	Category 1 Education Category 2 Implementation of reproductive health services Category 3 Parent and community support

The results of the study have identified five themes, namely (1) participants' perception of STIs as a disease caused by free sexual activities and changing partners, (2) efforts to avoid contracting STIs by maintaining socializing, personal hygiene, not having free sexual intercourse, maintaining food, and conducting routine check-ups, (3) information support obtained from social media and health workers, (4) The perceived obstacle is low adolescent self-awareness, shame, fear, and the unfriendly attitude of

health workers. (5) The need of participants is the existence of intensive health counseling and health center services involving cadres and parents of adolescents.

Theme one: participants' perceptions and experiences of STIs are diseases caused by free sexual activity and changing partners

Nineteen participants said that STIs are sexually transmitted diseases caused by changing partners and having sex freely. Examples of participant statements are as follows:
"… Like dating people in general. Yes, it's normal to have free sex... Already. If the former is just ordinary love, then you ... If the latter... eh free sex. Especially in the circle of young people." (P4) (p5) (p9) (p12) (p14)(p15) (p18) (p23) (p24) (p32)(p33)(p35)(p36)
"... When I was a kid, I tried alcohol. but it's mixed with Coca-Cola as well..." (p31)
"… Yesterday here this 17-year-old child was pregnant and he suddenly gave birth normally at home again.. (k10) (k2) (k3) (k14) (k21)

Four participants stated that teenagers living in their neighborhoods experienced *sexual harassment* such as being impregnated by an adult man and raped by their uncle. The participant statements are as follows:
"... yesterday there were still ten years of crying when asked if he was admitted that his sex was the same as his mother" (K1)(K2) (P34)(P28)
" .. Mrs. X's son who lives in Ujung Sono Noh, high school was impregnated by his girlfriend who was already working and was left to leave, that's a pity..." (K5)(K20)

Three participants stated that there were teenagers who experienced sexually transmitted diseases in the village area. As conveyed by the participants as follows:
"… is there because he plays too freely or changes partners as well. What disease does he have, what disease is it, what is syphilis ... This is a venereal disease, right, said doctor x yesterday there was a briefing to his family as well" (p3) (p4) (k8)

Theme two: efforts to avoid contracting STIs are to maintain socializing, personal hygiene, not having free sexual intercourse, taking care of food, and conducting regular check-ups.
Ten participants stated that the efforts made to avoid contracting STIs were to maintain the physical health of the reproductive system such as maintaining food intake, cleanliness of the reproductive system, and conducting health checks. For example, the participant's statement is as follows:
".... First, diet is important "(P7) (P1) (k3) (k5)
"… Maintain cleanliness, for example, if you urinate again, it must be dry first, if you urinate again. Then every 3 or 4 hours the bearings should be replaced..."(P1)(P2).
".... Check Our Reproductive Health"(P6) (P7) (P9) (K16)

Five participants stated that efforts were made to avoid contracting STIs to maintain social health by choosing positive friends. As conveyed by the participants as follows:
"... The way to take care of it may have to be from the environment first, find a healthy environment..." (p14) (p15) (p30)
"...If I choose a place where I will hang out, because my friends are very influential, who at first are not interested in drinking if all my friends invite me to do not like it, right" (P7) (k18)

Not having free sexual intercourse is also understood by participants as one way to maintain reproductive health in addition to maintaining socializing.
"Wow. Don't be too much of that either.. (smiling)... What, don't have that intimate relationship often.. yes.. Fear of getting sick, especially in different people. The Lion King... What is it?" (P3) (p27)(k24) (K29)

The way to maintain reproductive health identified from the three participants is to have regular health checks on health workers.

"Take care of your health well, continue what is the name, ee.. what.. Always consult a doctor to find out if there are problems in our reproduction" (P6) (K4)

"....go to the doctor if you have any complaints... about the complaint, the menstrual abdominal pain" (P7)

Theme three: information support obtained from social media, and health workers

Social media was also identified as one of the supports that provided information other than health workers to five participants about STIs.

"… If the internet likes to browse if HIV is sick, what is it?" (p9) (p14) (p37)

"… There is vaginal discharge, why, why is it itchy, it's afraid of genital herpes, that's also why I usually search on the internet first" (K3) (K24)

Eleven participants stated that they received support from health workers to maintain reproductive health through activities at school. The participant statements are as follows:

"... The health center explains common diseases such as HIV/AIDS, there are also examinations, asking the doctor if there are complaints. Then when HIV/AIDS education is done, most people ask what vaginal discharge is, then the doctor will explain it "(P1) (P3 (P4) (p5) (p19) (p25) (p32) (p40)(k1)(k17)(k20)

Theme four: Perceived barriers are low adolescent self-awareness, shame, fear, and unfriendly attitude of health workers

Twelve participants stated that the obstacles experienced by adolescents in maintaining their reproductive health came from adolescent self-awareness, lack of knowledge about STIs, feelings of shame and fear. The following is an example of a participant statement:

"The obstacles come from myself. The thought of checking reproductive health does not exist. Yes, as long as we feel healthy, it's not strange why check like HIV" (p1)(p4)(p8)(p25)(p28)

"... It's more of a shame than that. It's like we're still young, but that's how it is. I'm also afraid that later the result will turn out to be sick..." (P2) (P3) (P7)(p16)(k15)(k17)(k21)

Less friendly service from health workers is the reason why teenagers avoid going to health facilities because they do not want to. This was the experience expressed by thirteen participants about health services when they visited the local health facility.

"Sometimes there are officers who are a bit judes, so don't be judes. It's just like that, yes, the name also serves the community, it must be good.... There's a person who is that kind of person, right.. That's it. That's the answer." (p1) (P3) (P4) (p5) (p19) p18) (p23) (p24) (p32)(p33)(p35)(p36)(p40)

Theme five: The needs of participants are the existence of intensive health counseling and health center services involving cadres and parents of adolescents

Participants stated that adolescents' expectations for reproductive health services are the implementation of reproductive health services through counseling, education, and examinations by health workers. The following is an example of a participant statement:

".... I want it to be when our adolescent posyandu not only measures BB and TB, but also can check our reproductive organs...."(P2)(P3)(P17)

"We don't know if our reproductive condition is healthy or not. I want to be able to have a check from the health center" (P13)(P25)(P27)(P32)

"Hopefully, we will have special training and direction from the health center. Let the cadres and parents know what to do, if their child has reproductive problems, let alone ami-amit yes if they get STIs pa HIV"(K12)(K15)(K17)(K22)(K23)

DISCUSSION

The results of this study state that STIs occur because they often change sexual partners. This is in accordance with other sources that state that sexually transmitted infections are infections that are transmitted from one person to another through sexual contact (WHO, 2023). While in Indonesia, referring to the Minister of Health Regulation No. 21 of 2013, it is explained that Sexually Transmitted Infections (STIs) are infections transmitted through sexual intercourse through vaginal, anal, or oral sex due to changing sexual partners.

Some of the factors that affect STIs in adolescents include social and environmental factors such as free will, sexual violence and harassment, unemployment, and poverty, as well as low environmental and family roles. Lack of knowledge and information about STIs, limited access to reproductive health information and services, stigma, and risky sexual behaviors (unprotected sexual intercourse, changing partners, oral and anal sex, and drug and alcohol use) (WHO, 2023).

Obstacles that adolescents face in maintaining reproductive health, according to Rokhmah et al. (2022), come from within the adolescent himself. Adolescents' awareness of maintaining their reproductive and sexual health is still low, so they think they do not need health services. The research is in line with the results of the research of Yimer & Ashebir (2019) that adolescents with poor behavioral beliefs about sexuality have a 37% higher chance of engaging in sexual behavior risk because the individual's attitudes and intentions significantly influence his or her actions. The results of this study are different from those of Dovis et al. (2017), who did not find any obstacles from within adolescent girls living in localized areas in maintaining their reproductive health. The provision of friendly nursing services is one of the expectations of adolescents in accessing reproductive health services; this is in line with research stating that adolescent reproductive health in pregnant adolescents is not desired due to negative attitudes of health workers. Adolescents feel uncomfortable doing reproductive health screenings because officers do not provide a special space for adolescents so that adolescents' privacy or confidentiality is not maintained (Letaru, 2023).

This study shows that the efforts made by adolescents to avoid contracting STIs are maintaining socializing, personal hygiene, not having free sexual intercourse, maintaining food, and conducting regular check-ups. Providing information through education and socialization of reproductive health services is one of the efforts that can be made to improve adolescents' knowledge (Byansi et al., 2023). Adolescents who have the correct knowledge and understanding of reproductive health will encourage the growth of motivation and positive attitudes that can change adolescent behavior for the better (Sharma & Singh, 2023).

The results of research conducted to improve the quality of reproductive health of adolescent girls are by providing health-related information, including information on sexually transmitted diseases and HIV (Bahar et al., 2023). Another study states that using internet-based sexuality education packages like "*You and Me*" can also be used as an alternative in providing education because it has a positive effect on sexual knowledge and sexual attitudes among young women in vocational schools in Guangdong and Yunnan Vocational Schools, China (Hu et al., 2022).

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Improving the reproductive health of adolescent girls can also be done by using *Crush* is a mobile application aimed at improving sexual health by promoting the use of SRH services (*sexual and reproductive health)* and contraception among U.S. adolescent girls (14-18 years old) that have been shown to be effective in improving knowledge, attitudes, and *self-efficacy* of adolescent women in preventing the transmission of sexually transmitted diseases (García et al., 2023). Use of school-based peer education interventions with booklets, *flipcharts*, and posters with content focused on the recognition of female and male intimate organs, the development of sexual negotiation skills, and

knowledge about pregnancy, contraception, and sexually transmitted diseases has been shown to be effective in increasing adolescents' knowledge and awareness in maintaining their reproductive health (Wondimagegene et al., 2023).

The resolution of reproductive health problems in adolescent girls must be carried out in an appropriate and comprehensive manner. This is in accordance with the results of the study, which state that the strategy of providing reproductive health education to adolescents must be carried out in accordance with the needs of adolescents, looking at the right momentum, health education materials are provided comprehensively and packaged in a sharing manner, adolescents are positioned as interpersonal communication partners, and it is carried out with an interpersonal communication approach (Solihin et al., 2023).

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Ways to improve communication between young women and parents or families can be done by using *Linking Families and Teens* (LiFT). This study has been shown to be effective in improving adolescent communication with parents, improving adolescent girls' self-efficacy, sexual health knowledge, and skills, and reducing unwanted teenage pregnancies in Alaska, California, Hawaii, Idaho, Mississippi, New York, Oregon, Utah, and Washington (Brown et al., 2021). Improving adolescent reproductive health can also be done by approaching the peer environment of adolescent girls; this is in accordance with research conducted in the Carolinas and New York that by improving social and emotional skills and helping students form supportive peer relationships using the *Peer Group Connection* (PGC-HS) with the *Positive Youth Development* School-based (PYD), it has been shown to be effective in encouraging students to make healthier decisions in friendships and avoid risky behaviors of vaginal sex in high school (Walsh et al., 2022).

This research has several limitations. First, data was collected from only one urban area, namely Karet Kuningan Village, so the results could not be generalized to adolescent populations in rural areas or other areas. Second, because the method used is FGD, there is a possibility that participants are not fully open in conveying personal experiences related to sexual behavior due to the factor of shame or social pressure.

CONCLUSION

Adolescents still have a limited understanding of STIs and face various obstacles in obtaining correct sexual health information. Comprehensive sexuality education, open communication with parents, and increased access to reproductive health services need to be improved. This study recommends school, family, and community-based interventions to improve adolescents' knowledge and attitudes towards STI prevention.

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AUTHOR'S CONTRIBUTION

WK conceptualized and designed the study, coordinated data collection, and drafted the manuscript. INR and SR contributed to data analysis, interpretation of findings, and critical revision of the manuscript. SY and SF contributed to the development of the study framework and interpretation of the results. NL and NC supported the literature review, data validation, and manuscript preparation. CM contributed to writing the results and discussion sections and assisted in manuscript editing. All authors reviewed, approved the final version of the manuscript, and agreed to be accountable for all aspects of the work.

ETHICAL APPROVAL AND CONSENT

This study received ethical approval from the Ethics Committee of the Faculty of Nursing, Universitas Indonesia (Ethical Approval No. KET-153/UN2.F12.D1.2.1/PPM.00.02/2025). Before data collection, all participants were informed about the purpose, procedures, benefits, and voluntary nature of the study. Written informed consent was obtained from all participants prior to participation. Participants were informed of their right to withdraw from the study at any stage without any consequences. Confidentiality and anonymity were maintained throughout the research process.

FUNDING SOURCES

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CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

DATA AVAILABILITY STATEMENT

The datasets generated and analyzed during the current study are not publicly available because they contain information that could compromise the privacy and confidentiality of the participants. The data are available from the corresponding author upon reasonable request and with permission from the Faculty of Nursing, Universitas Indonesia.

PROTOCOL REGISTRATION

This qualitative study was not prospectively registered in any clinical trial or research protocol registry. The study was conducted in accordance with the approved research protocol reviewed by the Ethics Committee of the Faculty of Nursing, Universitas Indonesia.

REFERENCES

Bahar, O. S., Nabunya, P., Namuwonge, F., Samtani, S., Ssentumbwe, V., Namuli, F., Magorokosho, N., & Ssewamala, F. M. (2023). "It gives you a road map of what to do to solve your problems": acceptability of a combination HIV prevention intervention among adolescent girls in Uganda. *Sensoy Bahar et Al. BMC Public Health*, *23*, 249. https://doi.org/https://doi.org/10.1186/s12889-023-15083-2

Brown, S. A., Turner, R. E., & Christensen, C. (2021). Linking Families and Teens: Randomized Controlled Trial Study of a Family Communication and Sexual Health Education Program for Rural Youth and Their Parents. *Journal of Adolescent Health*, *69*, 398–405. https://doi.org/https://doi.org/10.1016/j.jadohealth.2021.05.020

Brunelli, L., Bravo, G., Romanese, F., Righini, M., Lesa, L., De Odorico, A., Bastiani, E., Pascut, S., Miceli, S., & Brusaferro, S. (2022). Sexual and reproductive health-related knowledge, attitudes and support network of Italian adolescents. *Public Health in Practice*, *3*(April), 1–7.

https://doi.org/10.1016/j.puhip.2022.100253

Byansi, W., Howell, T. H., Filiatreau, L. M., Nabunya, P., Kaiser, N., Kasson, E., Ssewamala, F. M., & Rehg, P. C. (2023). Sexual Health Behaviors and Knowledge Among Ugandan Adolescent Girls: Implications for Advancing Comprehensive Sexual Health Education Technology. *Child & Youth Care Forum*. https://doi.org/https://doi.org/10.1007/s10566-023-09730-3

Cannovo, N., Bianchini, E., Gironacci, L., Garbati, E., Di Prospero, F., Cingolani, M., Scendoni, R., & Fedeli, P. (2024). Sexually Transmitted Infections in Adolescents and Young Adults: A Cross Section of Public Health. *International Journal of Environmental Research and Public Health*, *21*(4). https://doi.org/10.3390/ijerph21040501

Cort, D. A., Reynolds, K., & Chakraborty, D. (2023). HIV stigma beliefs and unprotected sex among teenagers and young adults in sub-Saharan Africa: The moderating role of mass media exposure. *Social Science and Medicine*, *317*(October 2022), 115615. https://doi.org/10.1016/j.socscimed.2022.115615

Dovis, V., Setyowati, & Kurniawati, W. (2017). The Experience Of Young Women Living in a Prostitution Area in Maintaining Their Reproductive Health. *Comprehensive Child And Adolescent Nursing*, *40*(S1), 137–144. https://doi.org/https://doi.org/10.1080/24694194193.2017.1386981

Elvina, H., Situmorang, H. E., Kristina, Y., & Suprayitno, G. (2022). Exploration of the knowledge and perception of Papuan adolescents about premarital sex and sexually transmitted diseases. *Journal of Tropical Nursing Papua*, *05*(02). http://jktp.jurnalpoltekkesjayapura.com/jktp/index

García, G. M., Ewing, A., Olugbade, Y., DiClemente, R. J., & Kourtis, A. P. (2023). Crush: A Randomized Trial to Evaluate the Impact of a Mobile Health App on Adolescent Sexual Health. *Journal of Adolescent Health*, *72*, 287e294. https://doi.org/https://doi.org/10.1016/j.jadohealth.2022.09.019

Green, K. M., Matson, P. A., Reboussin, B. A., Milam, A. J., Furr-Holden, C. D. M., Rabinowitz, J. A., Powell, T. W., & Ialongo, N. S. (2019). Individual and Neighborhood Factors Associated with Sexual Behavior Classes in an Urban Longitudinal Sample. *Sexually Transmitted Diseases*, *46*(2), 98–104. https://doi.org/10.1097/OLQ.0000000000000920

Hu, Z., Fu, Y., Zhang, H., Guo, F., Jiayi Hee, M. C. E., & Tang, K. (2022). Effects of Sexuality Education on Sexual Knowledge, Sexual Attitudes, and Sexual Behaviors of Youths in China: A Cluster_Randomized Controlled Trial. *Journal of Adolescent Health*, *1*(9). https://doi.org/https://doi.org/10.1016/j.jadohealth.2022.11.006

Ikawati, N., & Saleh, S. (2023). *Physical changes in adolescents according to the World Health Organization (WHO) are about one-fifth of secondary. Primary sex changes are the maturation of organ function*. *7*(1), 1–2.

Kurniyawan, E. H., Rifai, A., Widayati, N., & Rasni, H. (2023). Parenting Patterns and Adolescent Self-Efficacy in Prevention of HIV/AIDS Risky Behavior. *Health and Technology Journal (HTechJ), 01*(01), 87–94.

Letaru, P. B. (2023). Factors Contributing to the Prevalence of Adolescent Pregnancy in Pajulu Sub County, Arua District. *Current Research in Interdisciplinary Studies*, *2*(1), 21–42. https://doi.org/https://doi.org/10.58614/cris212

Lu, T. S., Holmes, A., Noone, C., & Flaherty, G. T. (2020). Sun, sea and sex: a review of the sex tourism literature. *Tropical Diseases, Travel Medicine and Vaccines*, *6*(1), 1–10. https://doi.org/10.1186/s40794-020-00124-0

Mbizvo, M. T., Kasonda, K., Muntalima, N., Rosen, J. G., & Inambwae, S. (2023). Comprehensive sexuality education linked to sexual and reproductive health services reduces early and unintended pregnancies among in-school adolescent girls in Zambia. *BMC Public Health*, *23*, 348. https://doi.org/https://doi.org/10.1186/s12889-023-15023-0

Pertiwi, N. F. A. (2020). The role of community in pregnancy prevention is undesirable in adolescents. In *Midwifery Journal: UM Journal of Midwifery. Mataram* (Vol. 5, Issue 2, p. 83). https://doi.org/10.31764/mj.v5i2.1855

Prakasita, N., Tagela_Umbu, & Setyorini. (2022). Perception of Free Sex Behavior Among Adolescents Living in Karaoke Tourism Areas of Bandungan and Bergas Kidul. *JUANG: Journal of Counseling*

Vehicles, *5*(1), 80–90.

Risniawan, I., & Handayani, W. (2021). *Representation of the negative impact of premarital sex on adolescents in the film Two Blue Lines (Ferdinand de Saussure's Semiotic Analysis Study).*

Rokhmah, N. L., Astuti, A. W., Ernawati, D., Anggraeni, W. S., & Sewoko, E. (2022). Scoping Review: Adolescent Reproductive Health Services. *Jakiyah: Journal of General Scientific and Health Aisyiyah*, *7*(1), 12–26. https://doi.org/10.35721/jakiyah.v7i1.106

Septarini, N. W., Darmika, J., Parwangsa, P. L., & Suandewi, P. (2019). Factors that affect the prevention of sexually transmitted infections in adolescents in Bali. *Public Health Fak. Udayana University of Medicine*, 1–19.

Sharma, H., & Singh, S. (2023). Levels, trends and predictors of unintended pregnancy among adolescents and young women aged 15-14 in India: An analysis from NFHS-4 and 5 Survey. *Research Square*. https://doi.org/https://doi.org/10.21203/rs.3.rs-2367138/v1

Solihin, O., Azzahra, P., Junidi, A., & Windyaningrum, R. (2023). Sex Education for Adolescents in the Saritem Area, Bandung City. *TIMELINE: JOURNAL OF COMMUNICATION SCIENCES*, *6*(1). https://journal.unpas.ac.id/index.php/linimasa/article/view/6523/2771

Teferi Mengistu, G., Benti Terefe, A., Gemeda Gudeta, T., Kefale Mengistu, B., & Gobeze Mekonnen, B. (2022). Premarital sexual practice and associated factors among social science stream university students in Ethiopia. *International Journal of African Nursing Sciences*, *17*(January), 100452. https://doi.org/10.1016/j.ijans.2022.100452

Walsh, S., Jenner, E., Qaragholi, N., Henley, C., Demby, H., Leger, R., & Burgess, K. (2022). The Impact of a High School-Based Positive Youth Development Program on Sexual Health Outcomes: Results from a Randomized Controlled Trial. *Journal of School Health*, *92*(12), 1155–1164. https://doi.org/10.1111/josh.13216

WHO. (2019). RESPECT women: Preventing violence against women. *RESPECT Women: Preventing Violence against Women. Geneva: WHO*, 14. https://apps.who.int/iris/bitstream/handle/10665/312261/WHO-RHR-18.19-eng.pdf?ua=1

Wondimagegene, Y. A., Debelew, G. T., Koricha, Z., & Birhanu. (2023). Effectiveness of peer-led education interventions on contraceptive use, unmet need, and demand among adolescent girls in Gedeo Zone, South Ethiopia. A cluster randomized controlled trial. *Global Health Action*, *16*. https://doi.org/https://doi.org/10.1080/16549716.2022.2160543

World Health Organization. (2021). *Global patient safety action plan 2021-2030: Towards eliminating avoidable harm and health care*. *In World Health Organization*, *Macro Graphics Pvt. Ltd.*, *India*.

Yimer, B., & Ashebir, W. (2019). Parenting perspective on the psychosocial correlates of adolescent sexual and reproductive health behavior among high school adolescents in Ethiopia. *Reproductive Health*, *16*(1), 1–10. https://doi.org/10.1186/s12978-019-0734-5

Zhao, Q., Parrish, D., & He, N. (2023). Children and Youth Services Review Maternal incarceration and adolescent girls' risk of substance-exposed pregnancy, STIs , and HIV. *Children and Youth Services Review*, *148*(January), 106851. https://doi.org/10.1016/j.childyouth.2023.106851