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Determinants and Strategies for Improving Adolescent Reproductive Health in Indonesia

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ABSTRACT

Adolescent reproductive health is a public health issue requiring promotive, preventive, and youth-friendly service approaches. National studies indicate that knowledge, attitudes, media exposure, school support, parental roles, and the availability of adolescent-friendly health services such as PKPR and youth information and counseling centers such as PIK-Remaja influence adolescent reproductive health behavior. This article aimed to synthesize determinants and improvement strategies for adolescent reproductive health based on five Indonesian articles published between 2019 and 2023. A systematic literature review with narrative synthesis was applied. The reviewed articles included cross-sectional quantitative studies, a qualitative study, and community service articles addressing adolescent sexual behavior, sexual media exposure, PKPR utilization, PIK-Remaja, reproductive health education, peer cadres, and parental involvement. The synthesis identified four major themes: (1) knowledge alone is insufficient to prevent risky sexual behavior without attitude formation, social control, and media literacy; (2) PKPR services should be youth-friendly, confidential, and culturally sensitive; (3) PIK-Remaja, peer cadres, and reproductive-health-oriented schools are effective educational and mentoring channels; and (4) promotion, reproductive health education, and parental roles contribute to better adolescent service utilization. In conclusion, adolescent reproductive health improvement requires an integrated model based on schools, families, youth-friendly health services, digital media literacy, and peer counselor strengthening.

Keywords: *adolescent reproductive health; adolescent-friendly health services; PIK-Remaja; health education; adolescent sexual behavior*

INTRODUCTION

Adolescence is a transitional period from childhood to adulthood characterized by biological, psychological, and social changes, as well as the development of the reproductive system. During this phase, adolescents begin to experience the maturation of their reproductive organs, an increased interest in the opposite sex, a search for self-identity, and a need for accurate information about their bodies and healthy behaviors. When these changes are not accompanied by adequate guidance, adolescents are at risk of reproductive health problems, including risky sexual behavior, unintended pregnancy, sexually transmitted infections, social stigma, and low utilization of adolescent health services.

In the Indonesian context, adolescent reproductive health education still faces sociocultural barriers. Topics related to reproduction and sexuality are often considered sensitive, so adolescents tend to seek information from peers and the internet. This situation presents both opportunities and risks. The internet can provide health information, but it can

also expose adolescents to inaccurate information or sexual content that piques their curiosity without a proper understanding of the risks involved. Therefore, strengthening reproductive health literacy and media literacy is a crucial component in preventing risky sexual behavior.

The government and various educational institutions have developed several approaches to address adolescents' reproductive health needs. In health facilities, the Adolescent-Friendly Health Services (PKPR) program is designed to provide services that are youth-friendly, maintain confidentiality, are easily accessible, and tailored to adolescents' needs. In schools, the Adolescent Information and Counseling Center (PIK-Remaja), peer educators, and reproductive health education programs are widely used strategies to increase knowledge, shape attitudes, and promote healthy behaviors.

Although various programs are already in place, research findings indicate that the success of adolescent reproductive health interventions is not determined solely by the availability of educational materials. Factors such as attitudes, access to sexual media, social pressure, feelings of embarrassment about accessing services, service promotion, the role of parents, support from teachers and peer counselors, and the quality of health care providers also contribute to program success. A synthesis of these research findings is necessary to obtain a comprehensive picture of the determinants and strategies for improving adolescent reproductive health that are relevant for the development of programs in schools and health services.

This article aims to conduct a systematic review of five national articles on adolescent reproductive health that focus on sexual behavior, reproductive health education, PKPR, PIK-Remaja, peer educators, media access, and parental roles. The research questions in this article are: What determinants influence adolescent reproductive health, and what strategies can be used to improve knowledge, attitudes, healthy behaviors, and the utilization of adolescent reproductive health services?

METHOD

The design of this study is a systematic literature review using a narrative synthesis approach. This approach was chosen because the five articles analyzed had diverse designs, including quantitative cross-sectional studies, qualitative studies, and community service articles. Thus, the synthesis aimed to identify patterns in the findings, similarities, differences, and program implications, rather than to conduct a statistical meta-analysis.

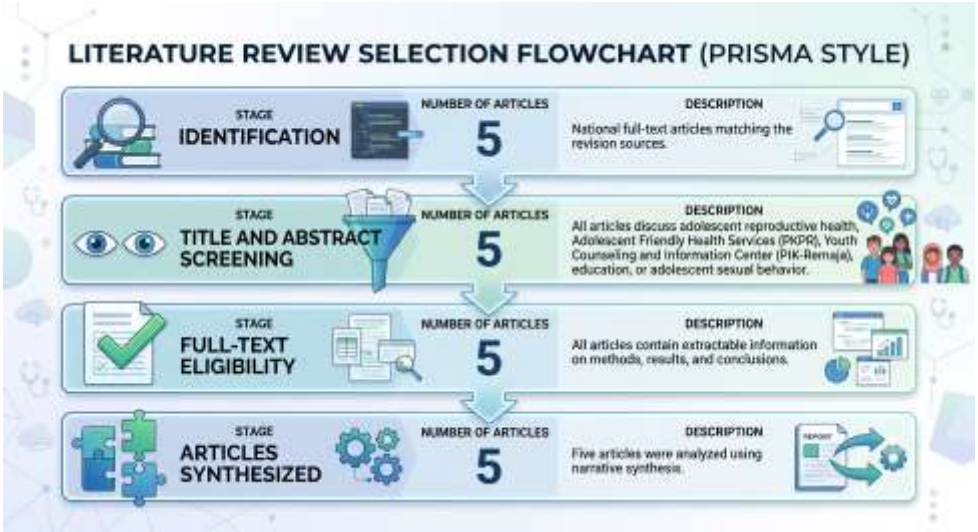
The research questions were formulated using the PEO (Population, Exposure, Outcome) framework. The study population consisted of adolescents and school students. The exposures

or interventions examined included reproductive health education, PIK-Remaja, PKPR, access to sexual media, peer educators, service promotion, and the role of parents. The outcomes of interest include knowledge of reproductive health, attitudes toward premarital sexual behavior, adolescent sexual behavior, utilization of youth-friendly health services, and increased awareness of reproductive health.

The inclusion criteria for this review are: (1) the article addresses adolescent reproductive health; (2) the article focuses on adolescents or school students; (3) the article presents methods and results that can be extracted; (4) the article is set in the Indonesian context; and (5) the article is available in full text. Exclusion criteria included articles that did not focus on adolescents, did not address reproductive health, did not contain research findings or activities that could be synthesized, and articles not used as sources for this review.

The review process consisted of four stages. First, identification of five source articles. Second, review of titles, abstracts, methods, results, and conclusions. Third, data were extracted into a table containing the authors, year, study design, sample, focus, findings, and implications. Fourth, a narrative synthesis was performed by grouping the findings into main themes. Quality assessment was conducted using a simple approach based on the clarity of the objectives, appropriateness of the study design, adequacy of the methodological information, clarity of the results reporting, and relevance to the review questions.

Table 1. Article Selection Process



RESULTS AND DISCUSSION

The five articles analyzed were published between 2019 and 2023. Three articles used a quantitative cross-sectional approach, one article used an exploratory qualitative design, and one article described a community service activity with pre-test and post-test evaluations. In

general, these articles addressed three broad groups of issues: determinants of adolescent sexual behavior, utilization of adolescent sexual and reproductive health services, and the effectiveness of school- and peer-based education and counseling.

Table 2. Characteristics of the Reviewed Articles

No	Author/Year	Design and Sample	Research Focus	Key Findings
1	Septiani (2019)	Cross-sectional analytical study; 132 high school students in Metro City.	The relationship between knowledge, attitudes, and access to sexual media and adolescent sexual behavior.	Knowledge was not significantly associated with sexual behavior (p=0.564). Attitudes toward reproductive health issues were significantly associated (p<0.001; OR=3.7), and access to sexual media was also significantly associated (p<0.001; OR=8.3).
2	Kurniawati & Astuti (2020)	Generic qualitative exploratory study; 10 adolescents, 10 young mothers, and 10 health workers.	Adolescent reproductive health services at PKPR from the perspectives of users and service providers.	Reproductive health services are available, but access among adolescents is low due to feelings of shame, social pressure, lack of trust in services, limited resources, human resources, funding, and the need for services that are more youth-friendly and culturally sensitive.
3	Hardjito, Suwoyo, & Yani (2021)	Community service; outreach to 15 teachers/educational staff and training for 35 student cadres.	Development of schools with a "Youth Caring for Reproductive Health" (Gempi Kespro) approach.	A Gempi Kespro cadre was formed. The average knowledge level of the cadres increased from 46.7 to 77.8. Schools demonstrated support for an environment that promotes reproductive health.
4	Najallaili &	Comparative cross-	Differences in	There were significant

	Wardiati (2021)	sectional study; 268 11th-grade students, consisting of 134 PIK-Remaja participants and 134 non-participants.	knowledge, attitudes toward premarital sexual behavior, and sexual behavior based on participation in PIK-Remaja.	differences between PIK-Remaja participants and non-participants in terms of knowledge (p=0.014), attitudes (p=0.012), and sexual behavior (p=0.015). PIK-Remaja is effective as a medium for information and counseling.
5	Sepdiana & Sumihardi (2023)	Quantitative cross-sectional study; 85 students from Gema Nusantara Health Vocational High Schools in Bukittinggi and Padang.	The relationship between promotional strategies, reproductive health education, and parental roles and the utilization of PKPR.	A combination of promotional activities, reproductive health education, and parental involvement was significantly associated with the use of PKPR. In bivariate analysis, reproductive health education had an OR of 4.683; the combination of promotional activities had an OR of 3.857; and parental involvement had an OR of 4.371.

Thematic Synthesis

Based on the data analysis, four interrelated main themes were identified. These themes indicate that adolescent reproductive health issues cannot be resolved solely through increased knowledge, but require a combination of education, attitude change, environmental support, service promotion, media literacy, and youth-friendly services.

Table 3. Thematic Synthesis of the Review Findings

Theme	Supporting Articles	Evidence Synthesis	Program Implications
Adolescents' Sexual Knowledge, Attitudes, and Behavior	Septiani (2019); Najallaili & Wardiati (2021)	Knowledge is important but is not always sufficient to prevent risky sexual behavior. Attitudes toward sexual behavior, access to	Education should focus on changing attitudes, developing decision-making skills, promoting assertive communication, and

		information, and the social environment play a major role in shaping behavior.	reinforcing the value of self-protection.
Adolescent-Friendly PKPR Services	Kurniawati & Astuti (2020); Sepdiana & Sumihardi (2023)	PKPR can serve as a gateway to reproductive health services, but adolescents' access is influenced by promotion, a sense of safety, confidentiality, comfort, parental involvement, and the quality of communication from health workers.	Community health centers and schools need to establish service mechanisms that are easily accessible, private, and non-judgmental, and use promotional materials appropriate for adolescents.
The Role of Schools, Peer Educators, and PIK-Remaja	Hardjito et al. (2021); Najallaili & Wardiati (2021)	Schools and peers are effective channels for education because adolescents interact extensively with their school environment and peer groups.	There is a need to establish reproductive health cadres, train peer counselors, strengthen the PIK-Remaja (Youth Information Center), and integrate reproductive health materials into school activities.
Media Literacy and Digital Information Monitoring	Septiani (2019); Kurniawati & Astuti (2020)	Exposure to sexual media and unsupervised internet use can increase the risk of misconceptions and risky sexual behavior. The internet is also a primary source of information for adolescents.	Reproductive health programs need to incorporate digital literacy, the ability to discern accurate information, and valid, youth-friendly online information channels.
The Role of Families and Parents	Kurniawati & Astuti (2020); Sepdiana & Sumihardi (2023); Hardjito et al. (2021)	Parents play a role in communication, supervision, emotional support, and adolescent	School and health service interventions need to involve parents through parenting

		decision-making. A lack of parent-adolescent communication can hinder the use of services and education.	classes, family education, and culturally appropriate communication about reproductive health.

The review findings indicate that adolescent reproductive health is a multidimensional issue. Adolescents' knowledge of reproductive health remains important as the foundation for healthy behavior. However, Septiani's (2019) findings show that knowledge does not always correlate significantly with adolescent sexual behavior. This suggests that a high level of knowledge does not necessarily lead to safe behavior if it is not accompanied by appropriate attitudes, self-control, a supportive social environment, and access to accurate information. In the context of adolescents, behavior is often influenced by curiosity, peer pressure, emotional development, and easy access to digital media.

Attitudes toward premarital sexual behavior emerge as a key determinant. Septiani (2019) demonstrated that attitudes toward reproductive health issues are significantly associated with adolescent sexual behavior. These findings are reinforced by Najallaili and Wardiati (2021), who showed significant differences in attitudes and sexual behavior between students who participated in the PIK-Remaja program and those who did not. Thus, reproductive health education must focus not only on cognitive aspects but also on affective aspects and life skills—such as the ability to refuse risky invitations, recognize personal boundaries, build healthy relationships, and seek appropriate help.

Access to sexual media is one of the most consistent risk factors. Septiani (2019) found that access to sexual media is significantly associated with adolescent sexual behavior. Kurniawati and Astuti (2020) also found that the internet and peers are the primary sources of information for adolescents seeking reproductive health information. The problem is that the digital information accessed by adolescents is not necessarily accurate and can trigger experimental behavior without an understanding of the risks. Therefore, adolescent reproductive health programs need to incorporate digital media literacy as a key component, including identifying valid information sources, the ability to assess the accuracy of information, and an understanding of the risks associated with exposure to sexual content.

Adolescent reproductive health services play a crucial role in the adolescent health care system. However, the availability of these services does not automatically guarantee their utilization. Kurniawati and Astuti (2020) noted that while adolescents are aware of these services, they are reluctant to access them due to feelings of shame, concerns about social

judgment, lack of trust in health workers or peer counselors, and limited access to media and resources. These findings underscore the need for "youth-friendly services"—that is, services that are easily accessible, maintain confidentiality, are non-judgmental, communicative, and aligned with the local sociocultural context.

Findings by Sepdiana and Sumihardi (2023) confirm that the utilization of PKPR is influenced by a combination of promotion, reproductive health education, and parental involvement. This means that efforts to improve service access are not sufficient by merely providing service spaces at community health centers or schools. Services need to be actively promoted through media and activities that resonate with adolescents, such as school-based health education, peer counselors, digital campaigns, health fairs, and creative activities. Health workers also need to possess adolescent communication skills so that adolescents feel safe to seek consultation.

Schools are a strategic setting for improving adolescent reproductive health. Hardjito, Suwoyo, and Yani (2021) demonstrated that establishing schools with a Gempi Kespro-oriented approach and training peer leaders can significantly improve students' knowledge. Peer leaders are important because adolescents often feel more comfortable communicating with peers than with adults. However, peer counselors or leaders must be trained in confidentiality, communication skills, case referral, and the limits of their authority to prevent the risk of personal information being disclosed.

The PIK-Remaja program also has strong evidence of effectiveness. Najallaili and Wardiati (2021) found that students participating in PIK-Remaja demonstrated better knowledge, a stronger rejection of premarital sexual behavior, and more controlled sexual behavior compared to non-participants. These results indicate that PIK-Remaja can serve as a model for school-based health promotion that is not only informative but also fosters a positive social environment and provides a space for counseling for adolescents. Strengthening the PIK-Remaja program needs to be part of school and local government strategies to prevent adolescent reproductive health issues.

The role of parents emerges as an important protective factor. Parents can provide emotional support, monitor media use, foster open communication, and help adolescents make safe decisions. However, many families still view discussions about reproductive health as a taboo topic. Therefore, adolescent reproductive health interventions need to involve parents through family education, parenting classes, or culturally appropriate communication that is non-intimidating yet clear about risks and self-protection.

Based on a synthesis of five articles, the recommended model for improving adolescent reproductive health is an integrated model. This model includes school-based education, strengthening PIK-Remaja and peer leaders, promoting engaging and youth-friendly PKPR, involving parents, digital media literacy, and capacity building for health workers. This integrated model is more relevant than single interventions because adolescent behavior is influenced by a combination of individual, family, school, peer, media, and health service factors.

CONCLUSION

A systematic literature review of five national articles shows that improving adolescent reproductive health requires a comprehensive approach. Knowledge is an important foundation, but it is not sufficient without attitude formation, media literacy, family support, school support, and youth-friendly health services. Attitudes toward sexual behavior, access to sexual media, service promotion, reproductive health education, and the role of parents are factors that contribute to adolescent behavior and the use of health services.

The most relevant strategies include strengthening school-based programs through PIK-Remaja, peer educators, and schools with a reproductive health focus; improving the quality of youth-friendly and culturally sensitive reproductive health education (PKPR); involving parents; and integrating digital literacy into reproductive health education. With this integrated model, adolescent reproductive health interventions are expected not only to increase knowledge but also to shape adolescents' attitudes, behaviors, and confidence in accessing appropriate services.

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