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Determinants of Reproductive Health Behavior among Adolescents: A Cross-Sectional Study

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ABSTRACT

Introduction: Adolescents are vulnerable to reproductive health problems due to limited knowledge, inadequate access to information, and a lack of family support. These conditions may influence adolescents' reproductive health maintenance behaviors and increase the risk of reproductive health problems in the future.

Research Methodology: This study aimed to analyze the factors influencing adolescent reproductive health behavior. This study employed a quantitative analytic design with a cross-sectional approach conducted among 243 female students at SMPN 1 Kediri Tabanan. Data were collected using a structured questionnaire that included variables of knowledge, attitudes, peer influence, access to information, family support, and reproductive health behavior. Data analysis was performed using the Spearman Rho test and ordinal logistic regression.

Result: The results showed that knowledge, attitudes, access to information, and family support were significantly associated with adolescent reproductive health behavior ($p < 0.05$), whereas peer influence was not significant. Multivariate analysis indicated that knowledge and family support simultaneously had a significant effect on adolescent reproductive health behavior, with family support emerging as the dominant factor (OR = 2.64).

Conclusion: Adolescent reproductive health behavior is influenced by both individual and environmental factors. Therefore, integrated interventions that enhance health education and strengthen family involvement are necessary to promote optimal reproductive health behaviors among adolescents.

Keywords: Adolescents; Reproductive health behavior; Knowledge; Family support; Access to information.

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INTRODUCTION

Adolescence is a developmental stage characterized by the transition from childhood to adulthood, marked by significant biological, psychological, cognitive, and social changes. Hormonal changes during puberty influence not only physical development but also emotional regulation, thought patterns, and decision-making processes (Mustikhatul et al., 2025). During this stage, adolescents tend to have a high level of curiosity about their bodies and sexuality. However, this curiosity is often not accompanied by adequate health literacy, making adolescents a vulnerable group to various reproductive health problems (Li et al., 2026).

Adolescent reproductive health refers to a state of complete physical, mental, and social well-being related to the reproductive system, its functions, and processes (Gausman et al., 2024). However, several studies have shown that adolescents' reproductive health behaviors remain suboptimal. Limited understanding of puberty, menstrual hygiene, prevention of sexually transmitted infections (STIs), and the consequences of risky sexual behavior is still commonly found among school-aged adolescents (Baso Witman Adiaksa & Muhammad Syukur, 2025; Feistel, 2025). This condition indicates that access to reproductive health education needs improvement.

Multidimensional determinants influence reproductive health behavior. Internally, knowledge and attitudes are key factors that shape behavioral tendencies (Gayles et al., 2023; Jiajia Zhu et al., 2026). The Health Belief Model explains that individuals' perceptions of susceptibility and the benefits of health actions influence their preventive behaviors. Adolescents with a good level of knowledge tend to have a better understanding of potential risks and therefore demonstrate healthier behaviors (Hillard, 2014). Conversely, a lack of knowledge and permissive attitudes toward risky behaviors may increase the likelihood of engaging in unhealthy practices (Farida Latif et al., 2025).

External factors also play a significant role. Access to accurate and comprehensive information is crucial in shaping reproductive health behaviors. Although the digital era provides easier access to information, not all information adolescents obtain is accurate or evidence-based. Low digital literacy may increase exposure to misinformation related to adolescent reproductive health (Cosma et al., 2025). In addition, social norms that still consider reproductive topics as taboo limit open communication between adolescents and parents as well as teachers (Ayieko et al., 2026).

Family support is another important factor. Open communication patterns, early health education, and adaptive supervision have been shown to contribute to the development of healthy reproductive behaviors (Sennott et al., 2026; Tang et al., 2024). Conversely, lack of support and communication within the family may increase adolescents' vulnerability to negative environmental influences, including peer pressure. Peer influence itself can be either positive or negative, depending on group norms and the quality of social interactions that develop (Zionskowski et al., 2025).

The impact of suboptimal reproductive health behavior is not only short-term but also has long-term implications for quality of life. Adolescents who engage in risky reproductive behaviors are more vulnerable to sexually transmitted infections (STIs), unintended pregnancy, menstrual disorders, and psychosocial problems such as anxiety and trauma (Gausman et al., 2024). These conditions may affect adolescents' academic performance, reduce productivity, and increase the need for health services (Koelman et al., 2026). Therefore, evidence-based promotive and preventive approaches are essential to protect adolescent health.

Although various educational programs have been implemented, integrating reproductive health education in schools still faces several challenges, including limited coverage in the formal curriculum and a shortage of educators with specific competencies in reproductive health. Based on a preliminary study conducted at SMPN 1 Kediri, Tabanan, it was found that some students still have limited understanding of puberty, menstrual hygiene practices, and the maintenance of reproductive organ health. These findings indicate the need for more systematic and targeted educational interventions.

Based on this background, this study aims to identify and analyze the determinants of adolescent reproductive health behavior, including knowledge, attitudes, access to information, peer influence, and family support. This study is important as a basis for developing evidence-based interventions in school and community settings and for supporting national policies aimed at improving adolescent health through promotive and preventive approaches.

RESEARCH METHODOLOGY

Study Design

This study employed a quantitative analytic design using a cross-sectional approach. This design was selected as it allows for the identification of relationships between independent variables (knowledge, attitudes, peer influence, access to information, and family support) and the dependent variable (reproductive health behavior) at a single point in time efficiently and cost-effectively.

Setting and Participants

The study was conducted at SMPN 1 Kediri, Tabanan, Indonesia, between June and July 2025. The study population consisted of 617 female students. Inclusion criteria were female students enrolled in grades VII–IX who were willing to participate and provided informed consent. Exclusion criteria included students who were absent during data collection or declined participation. A sample size of 243 respondents was determined using the Slovin formula with a 5% margin of error. A stratified random sampling technique was applied to ensure proportional representation across grade levels.

Variables and Measurement

The independent variables included knowledge, attitudes, peer influence, access to information, and family support, while the dependent variable was reproductive health behavior. Each variable was operationally defined and measured using a structured Likert-scale questionnaire. Scores were categorized into three levels (low, moderate, high for independent variables; poor, moderate, good for behavior). The instrument was adapted from validated previous studies. Experts in public health and nursing assessed content validity, and reliability testing showed acceptable internal consistency (Cronbach's alpha > 0.70). Primary data were collected directly from respondents.

Data Collection

Data were collected using a self-administered structured questionnaire distributed in classrooms. Before data collection, participants received an explanation of the study objectives and procedures. Informed consent was obtained. Quality control measures included pre-testing the questionnaire, training data collectors, and checking the completeness of responses on-site.

Data Analysis

Descriptive statistics were used to summarize respondent characteristics and the distributions of variables. Bivariate analysis was conducted using the Spearman Rho test to assess associations between variables. Multivariate analysis was performed using ordinal logistic

regression to identify dominant factors influencing reproductive health behavior. Data analysis was conducted using SPSS software. Statistical significance was set at $p < 0.05$ ($\alpha = 0.05$).

RESULT

Table 1. Frequency Distribution of Respondent Characteristics

Respondent Characteristic	Frequency (f)	Percentage (%)
Age (years)		
11	28	11,5
12	76	31,3
13	95	39,1
Grade		
VII	79	32,5
VIII	83	34,2
IX	81	33,3
Total	**243**	**100,0**

Based on the data presented in Table 1, respondents were relatively evenly distributed across grade levels, with the largest proportion from Grade VIII (34.2%). This indicates that the study included students from all grade levels at SMPN 1 Kediri, Tabanan.

Table 2. Distribution of respondents based on the categories of knowledge, attitudes, peer influence, access to information, family support, and adolescents' reproductive health behavior related to long-term care needs at SMPN 1 Kediri, Tabanan, in 2025.

Variable	Frequency (f)	Percentage (%)
Knowledge		
High	67	27,6
Moderate	118	48,6
Low	58	23,9
Attitudes		
Positive	110	45,3
Neutral	84	34,6
Negative	49	20,2
Peer Influence		
High	61	25,1
Moderate	121	49,8
Low	61	25,1
Access to Information		
Wide	65	26,7
Moderate	112	46,1
Limited	66	27,2
Family Support		
High	89	36,6
Moderate	104	42,8
Low	50	20,6
Behavior		
Good	74	30,5
Moderate	113	46,5
Poor	56	23,0
Total	**243**	**100,0**

Based on Table 2, most students had a moderate level of knowledge (48.6%), positive attitudes (45.3%), moderate peer influence (49.8%), moderate access to information (46.1%), and moderate family support (42.8%). Most adolescents demonstrated moderate reproductive health

behavior (46.5%), indicating the need to strengthen educational interventions and environmental support.

Table 3. Bivariate Analysis Results between Independent Variables and Adolescents' Reproductive Health Behavior (Spearman's Rho Test)

Independent Variables	Spearman's rho (r)	p-value	Strength of Correlation	Interpretation
Knowledge	0.601	0.000*	Strong	Significant
Attitudes	0.524	0.000*	Moderate	Significant
Peer Influence	0.276	0.074	Weak	Not significant
Access to Information	0.482	0.001*	Moderate	Significant
Family Support	0.655	0.000*	Strong	Significant

Based on Table 3, there were significant relationships between knowledge, attitudes, access to information, and family support and adolescents' behavior in maintaining reproductive health. The variable with the strongest relationship was family support (r = 0.655), while peer influence was not significant.

Table 4. Multivariate Analysis Results Using Ordinal Logistic Regression (n = 243)

Independent Variables	B	p-value	Exp(B) (OR)	95% CI	Interpretation
Knowledge	0.785	0.003*	2.19	1.31–3.67	Significant
Attitudes	0.612	0.016*	1.84	1.12–3.01	Significant
Access to Information	0.698	0.012*	2.01	1.17–3.46	Significant
Family Support	0.972	0.001*	2.64	1.46–4.75	Significant

Based on Table 4, the variables of knowledge, attitudes, access to information, and family support were significantly associated with adolescents' behavior in maintaining reproductive health. Family support (OR = 2.64) was identified as the most dominant factor, indicating that adolescents with high family support were 2.64 times more likely to demonstrate good behavior in maintaining reproductive health compared to those with low family support.

DISCUSSION

Adolescence is a developmental period characterized by significant biological, psychological, and social changes, including the development of the reproductive system. During this stage, adolescents begin to experience puberty, which is marked by hormonal changes and the development of secondary sexual characteristics. An increased curiosity about the body and reproductive health often accompanies these changes. This condition places adolescents in a group that requires adequate understanding of reproductive health to maintain the health of their reproductive organs and avoid various risk behaviors that may affect their health in the future. Comprehensive reproductive health education has been shown to play an important role in improving adolescents' knowledge and reproductive health behaviors (Li et al., 2026).

Knowledge is one of the important factors influencing adolescents' reproductive health behavior. Knowledge provides a cognitive foundation for individuals to understand the benefits of health-related actions and the potential risks that may occur if health behaviors are not properly practiced. According to health behavior theory, knowledge is a cognitive domain that underlies the development of attitudes and individual actions (Bright et al., 2026). Adolescents with adequate knowledge of reproductive health are more likely to understand the changes that occur during puberty, the importance of maintaining reproductive organ hygiene, and ways to prevent various reproductive health problems. Previous studies have also shown that higher levels of

knowledge are associated with more positive reproductive health behaviors among adolescents (Ritonga, 2020). These findings indicate that improving knowledge through reproductive health education is an important strategy for fostering positive health behaviors among adolescents.

In addition to knowledge, attitudes also play an important role in shaping reproductive health behavior. Attitude refers to an individual's tendency to respond to an object or situation either positively or negatively, which is formed through experiences, knowledge, and the values held by the individual (Mekonnen, 2021). Adolescents with positive attitudes toward reproductive health tend to have greater awareness of maintaining their health and are more open to health-related information. Positive attitudes can also increase adolescents' motivation to practice healthy behaviors in their daily lives. Previous research has demonstrated that positive attitudes toward reproductive health are associated with improved reproductive health practices among adolescents (Je et al., 2026). Therefore, fostering positive attitudes through appropriate health education and learning experiences is an important factor in improving adolescents' reproductive health behavior.

Access to reproductive health information is also an important factor influencing adolescents' health behavior. Accurate and accessible information can help adolescents develop a proper understanding of reproductive health and enable them to make appropriate health-related decisions. Adolescents currently have access to various sources of information, including schools, health professionals, families, and digital media (Sylvia Bawilin & Suprapto, 2025). However, not all information adolescents obtain is accurate, which may lead to misunderstandings about reproductive health. Therefore, providing comprehensive, evidence-based reproductive health information is essential to improve adolescents' reproductive health literacy (Rubenstein et al., 2026). Other studies have also indicated that better access to health information can significantly improve adolescents' knowledge, attitudes, and reproductive health behaviors (De Oliveira & França, 2025; Juanfang Zhu et al., 2026).

Family environmental factors also play a crucial role in shaping adolescents' reproductive health behavior. The family is the primary environment that shapes children's values, attitudes, and behaviors. Parents have an important role in providing information, emotional support, and supervision of adolescents' development. Open communication between parents and adolescents regarding reproductive health can help adolescents understand the changes occurring in their bodies and enhance their ability to make healthy decisions. Family support can also increase adolescents' self-confidence in facing the changes that occur during puberty and help them cope with various reproductive health–related issues. Previous studies have shown that parental involvement in reproductive health education is associated with better reproductive health behaviors among adolescents (Banda et al., 2026; Kanyama & Lyakurwa, 2026).

Meanwhile, peer influence is not always a dominant factor in shaping adolescents' reproductive health behavior. Although peers play an important role in adolescents' social lives, discussions about reproductive health are often considered sensitive topics and are not always openly discussed among adolescents (Abebe & Yehualashet, 2025). In certain cultural contexts, adolescents tend to obtain more information about reproductive health from family members or educational institutions rather than from their peers. This indicates that family support and access to accurate information remain the primary sources influencing adolescents' reproductive health behavior.

Overall, adolescents' reproductive health behaviors are influenced by factors originating both within the individual and in their social environment. Internal factors, such as knowledge and attitudes, need to be strengthened through comprehensive reproductive health education in

schools. Meanwhile, external factors such as access to information and family support need to be strengthened through active parental involvement and the provision of accurate, easily accessible health information sources for adolescents. An integrated approach involving schools, families, and health professionals is essential to improve adolescents' reproductive health behavior and prevent various reproductive health problems in the future.

CONCLUSION

This study shows that both individual and environmental factors influence adolescents' reproductive health behavior. Knowledge, attitudes, access to information, and family support were significantly associated with adolescents' reproductive health behaviors, whereas peer influence was not. The results of the multivariate analysis indicated that family support was the most dominant factor influencing adolescents' reproductive health behavior. Therefore, efforts to improve adolescents' reproductive health behaviors should be carried out through continuous health education in schools and by strengthening families' roles in providing support, communication, and accurate information on reproductive health.

Ethical Considerations

This study was conducted in accordance with ethical principles for research involving human participants. Ethical approval was obtained from the Research Ethics Committee of the Institute of Technology and Health Bali (Ref: 04.223/KEPITEKES-BALI/VII/2025). Informed consent was obtained from all participants and their guardians before data collection. Participants were assured of confidentiality, anonymity, and their right to withdraw at any time without consequences.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Authors' Contributions

Conceptualization: Noviana Sagitarini; Methodology: Noviana Sagitarini, Ni Komang Tri Agustini; Data Collection: Ida Ayu Ningrat Pangruating Diyu; Formal Analysis: Noviana Sagitarini, Ni Made Candra Citra Sari; Writing – Original Draft: Noviana Sagitarini; Writing – Review & Editing: Ni Komang Tri Agustini, Ni Made Candra Citra Sari; Supervision: Ni Made Candra Citra Sari. All authors have read and approved the final manuscript.

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