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Relationship between knowledge level and reproductive health behavior among adolescent girls: A cross-sectional study

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Abstract

Background: Adolescent reproductive health is an important aspect of adolescent girls' development because it relates to their ability to understand bodily changes, maintain reproductive hygiene, and make responsible health decisions. Adequate knowledge is needed to prevent risky behavior, reproductive tract infections, and misinformation commonly obtained from peers and digital media.
Objective: This study aimed to analyze the relationship between knowledge level and reproductive health behavior among adolescent girls at SMA Sentosa Bhakti OKU.
Methods: This study used an analytical quantitative design with a cross-sectional approach. The population consisted of all 30 female grade XII students at SMA Sentosa Bhakti OKU, and the sample was selected using total sampling. The independent variable was reproductive health knowledge, while the dependent variable was reproductive health behavior. Data were collected using questionnaires and analyzed using univariate and bivariate analyses. The bivariate analysis used the Chi-square test with an expected-count assessment; if the assumption was not met, the Fisher-Freeman-Halton Exact Test was used as an alternative.
Results: Most respondents had a high level of knowledge (13 respondents; 43.3%), followed by moderate knowledge (7 respondents; 23.3%) and low knowledge (10 respondents; 33.3%). Reproductive health behavior was mostly categorized as good (12 respondents; 40.0%), sufficient (8 respondents; 26.7%), and poor (10 respondents; 33.3%). The analysis showed a significant relationship between knowledge level and reproductive health behavior among adolescent girls ($p = 0.003$).
Conclusion: Knowledge level was significantly associated with reproductive health behavior among adolescent girls. Schools, school health units, and community health centers should strengthen structured, adolescent-friendly, and sustainable reproductive health education.

Background

Adolescence is a transitional period from childhood to adulthood characterized by biological, psychological, social, and emotional changes. These changes make adolescents vulnerable to various health problems, including reproductive health problems. Adolescent girls experience more visible reproductive changes, such as menstruation, hormonal changes, and the need to maintain reproductive organ hygiene. This condition requires adolescents to have accurate understanding so that they can maintain reproductive health appropriately (World Health Organization, 2023; Chandra-Mouli et al., 2015).

Adolescent reproductive health remains an important issue because limited understanding may increase the risk of unhealthy behavior. Adolescents who do not receive accurate information may have difficulty understanding bodily changes, maintaining personal hygiene, preventing infections, and avoiding risky sexual behavior. Inaccurate information from peers or social media may also shape misconceptions about reproductive health. International guidance emphasizes that comprehensive, age-appropriate, evidence-based sexuality and reproductive health education delivered through schools can improve adolescents' knowledge, attitudes, and decision-making skills (UNESCO et al., 2018; Salam et al., 2016).

Knowledge is one of the factors associated with adolescent reproductive health behavior. Adolescents with good knowledge tend to be better able to recognize risks, understand how to maintain reproductive hygiene, and make more appropriate health-related decisions. Conversely, inadequate knowledge may lead adolescents to neglect personal hygiene, misunderstand signs of reproductive health problems, and delay seeking health assistance when problems occur. Therefore, improving knowledge is an important strategy for preventing adolescent reproductive health problems (Atik & Susilowati, 2021; Bawental et al., 2019; Ghofur et al., 2023).

The school context shows that reproductive health education still needs to be strengthened. A preliminary study at SMA Sentosa Bhakti OKU found that, among 10 female students interviewed, 6 did not understand reproductive health well and 4 showed low concern for reproductive health. These preliminary findings indicate a gap in adolescent girls' understanding and awareness of reproductive health. This condition may affect daily reproductive health behavior, particularly in maintaining hygiene, recognizing risks, and seeking accurate information.

Schools have a strategic role in improving adolescents' reproductive health knowledge and behavior. However, reproductive health education in schools is often not conducted routinely, structurally, or openly because reproductive issues are still considered sensitive. School health units and community health centers can provide accurate information through health education, counseling, and adolescent health programs. An adolescent-friendly school approach should consider the involvement of teachers, health workers, parents, and access to safe and non-judgmental information (UNICEF, 2021; Harahap et al., 2024).

Based on this background, this study aimed to analyze the relationship between knowledge level and reproductive health behavior among adolescent girls at SMA Sentosa Bhakti OKU. The findings are expected to provide a basis for schools, school health units, and community health centers in developing reproductive health education that is more structured and responsive to the needs of adolescent girls.

Methods

Study Design

This study used an analytical quantitative design with a cross-sectional approach. This design was used to analyze the relationship between knowledge level as the independent variable and reproductive health behavior as the dependent variable at one point of measurement.

Population and Sample

The population in this study consisted of all grade XII female students at SMA Sentosa Bhakti OKU, totaling 30 students. The sampling technique used was total sampling because all members of the population were included as research respondents. The inclusion criteria were grade XII female students, willingness to participate as respondents, and attendance during data collection. The exclusion criteria were incomplete questionnaire responses or unwillingness to continue participation in the study.

Research Instruments

The research instruments consisted of a reproductive health knowledge questionnaire and a reproductive health behavior questionnaire. The knowledge questionnaire was used to measure respondents' understanding of adolescent reproductive health, while the behavior questionnaire was used to assess respondents' practices in maintaining reproductive health. Knowledge scores were categorized as high, moderate, and low. Behavior scores were categorized as good, sufficient, and poor.

Data Collection

Data collection was conducted in October 2025 at SMA Sentosa Bhakti OKU. Before completing the questionnaire, respondents were informed about the study objectives, benefits, confidentiality of data, and their right to refuse or discontinue participation. Respondents who agreed to participate then completed an informed consent form. Afterward, respondents completed the questionnaire independently with assistance from the researcher when needed. Respondents' data were kept confidential by using respondent codes rather than real names.

Data Analysis

Data were analyzed using univariate and bivariate analyses. Univariate analysis was used to describe the frequency distribution of knowledge level and reproductive health behavior. Bivariate analysis was used to determine the relationship between knowledge level and reproductive health behavior. The statistical test used was the Chi-square test. However, because the sample size was small and

the contingency table was 3 x 3, the expected-count assumption needed to be examined. If any expected count was less than 5, Fisher's Exact Test or the Fisher-Freeman-Halton Exact Test was considered a more appropriate alternative.

Ethical Considerations

This study adhered to ethical principles, including informed consent, confidentiality of respondents' identities, voluntary participation, and the use of data only for research purposes. Respondents were informed that participation was voluntary and would not affect their academic status at school.

Results

This section presents the findings of the study on the relationship between knowledge level and reproductive health behavior among adolescent girls.

Table 1. Frequency Distribution of Knowledge Level and Reproductive Health Behavior Among Adolescent Girls

Variable	Frequency	Percentage (%)
Knowledge		
High	13	43.3
Moderate	7	23.3
Low	10	33.3
Reproductive health behavior		
Good	12	40.0
Sufficient	8	26.7
Poor	10	33.3

Table 1 shows that most adolescent girls at SMA Sentosa Bhakti OKU had a high level of reproductive health knowledge, with 13 respondents (43.3%). Respondents with moderate knowledge accounted for 7 respondents (23.3%), while those with low knowledge accounted for 10 respondents (33.3%).

Respondents' reproductive health behavior was mostly categorized as good, with 12 respondents (40.0%). Respondents with sufficient behavior accounted for 8 respondents (26.7%), while those with poor behavior accounted for 10 respondents (33.3%). These findings indicate that most respondents had good knowledge and reproductive health behavior, although approximately one-third of respondents remained in the low knowledge and poor behavior categories.

Table 2. Relationship Between Knowledge Level and Reproductive Health Behavior Among Adolescent Girls

Knowledge	Good	Sufficient	Poor	Total	p-value
High	8	4	1	13	0.003
Moderate	4	2	1	7	
Low	0	2	8	10	
Total	**12**	**8**	**10**	**30**	

Table 2 shows that respondents with high knowledge mostly had good reproductive health behavior, namely 8 respondents. In contrast, respondents with low knowledge mostly had poor reproductive health behavior, namely 8 respondents. The bivariate analysis showed a p-value of 0.003, indicating a significant relationship between knowledge level and reproductive health behavior among adolescent girls.

Discussion

The results showed that most adolescent girls at SMA Sentosa Bhakti OKU had a high level of

reproductive health knowledge, with 13 respondents (43.3%). The findings also showed that most respondents had good reproductive health behavior, with 12 respondents (40.0%). These results indicate a positive tendency in knowledge and reproductive health behavior among adolescent girls, although some respondents still had low knowledge and poor behavior. This condition suggests that reproductive health education needs to be strengthened so that all adolescents can develop better understanding and healthier behavior.

The analysis showed a significant relationship between knowledge level and reproductive health behavior among adolescent girls. Respondents with high knowledge tended to have good reproductive health behavior, while respondents with low knowledge tended to have poor reproductive health behavior. This finding indicates that knowledge may serve as a foundation for adolescents in making decisions related to reproductive health. Adolescents who understand reproductive health are more capable of maintaining personal hygiene, recognizing risks, and avoiding behaviors that may harm reproductive health.

This finding is consistent with previous studies reporting that knowledge is associated with adolescent reproductive health behavior. Good knowledge can help adolescents develop healthier attitudes and actions in maintaining reproductive organs. Ghofur et al. (2023) showed that adolescent knowledge was associated with menstrual personal hygiene. Similar findings were reported by Hasdiana (2025), who found that adolescents' knowledge level was related to reproductive health behavior. Therefore, this study supports the view that reproductive health education should be provided during adolescence so that healthy behavior can be established earlier.

Theoretically, the relationship between knowledge and reproductive health behavior can be explained through cognitive and decision-making processes. Knowledge provides a basis for adolescents to understand the benefits of healthy behavior and the risks of inappropriate behavior. Adolescents who have accurate information are better able to assess actions that need to be taken, such as maintaining hygiene during menstruation, avoiding misinformation, and seeking health assistance when complaints occur. Systematic reviews of adolescent reproductive health interventions also emphasize that school-based education and appropriate health communication can improve knowledge, attitudes, and preventive behavior related to reproductive health risks (Salam et al., 2016; UNESCO et al., 2018).

The findings have important implications for schools, school health units, community health centers, and health workers. Schools should provide structured reproductive health education through classroom learning, health education sessions, or school health-unit programs. School health units can serve as accessible adolescent health information centers for female students. Community health centers should also collaborate with schools to provide periodic education on reproductive health, menstrual hygiene, infection prevention, and healthy adolescent behavior. Health workers need to deliver materials using simple, non-judgmental, and adolescent-appropriate language. This approach is in line with adolescent health recommendations that emphasize adolescent-friendly services, access to accurate information, and engagement of the school environment (World Health Organization, 2023; UNICEF, 2021).

This study has several limitations. The sample included only 30 respondents; therefore, the findings cannot be widely generalized to all adolescent girls. The study was also conducted in one school only, meaning that the characteristics of other school environments may differ. In addition, the data were collected using questionnaires, which may create social desirability bias, particularly because reproductive health remains a sensitive topic for some adolescents. The cross-sectional design also explains association only and cannot establish effect or causality.

Further research should involve larger samples and multiple schools to obtain more representative findings. Future studies may also include other variables, such as parental roles,

sources of information, attitudes, peer influence, the role of school health units, and access to adolescent health services. In addition, school-based reproductive health education interventions can be developed to improve adolescent girls' knowledge and reproductive health behavior in a more targeted manner.

Conclusion and Recommendation

This study showed that most adolescent girls at SMA Sentosa Bhakti OKU had a high level of reproductive health knowledge and good reproductive health behavior. The analysis showed a significant relationship between knowledge level and reproductive health behavior among adolescent girls, with a p-value of 0.003. Adolescents with better reproductive health knowledge tended to have better reproductive health behavior. These findings emphasize that improving knowledge through school-based reproductive health education is important for shaping healthy reproductive health behavior among adolescent girls.

Schools should strengthen adolescent reproductive health education programs through regular learning activities, health education sessions, and counseling. School health units are expected to serve as easily accessible reproductive health information centers for female students. Community health centers should strengthen collaboration with schools in providing periodic adolescent reproductive health education. Health workers are expected to provide education using an adolescent-friendly, communicative, and non-judgmental approach. Future researchers are advised to use larger sample sizes, involve several schools, and include additional factors such as parental roles, peer influence, information sources, and adolescent attitudes toward reproductive health.

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Declaration of conflict of interest
The authors declare no competing interests.

Declaration on the Use of AI
The authors declare that no artificial intelligence tools were used in the preparation, writing, or editing of this manuscript.

Data Availability Statement
Data sharing is not applicable to this article.

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