
Original Article

ASSOCIATION BETWEEN REPRODUCTIVE HEALTH KNOWLEDGE AND EXTERNAL GENITAL HYGIENE BEHAVIOR AMONG ADOLESCENT GIRLS IN SENIOR HIGH SCHOOL

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ABSTRACT

Background: Adolescent reproductive health literacy plays a critical role in preventing infections and promoting healthy hygiene behaviors. However, many adolescent girls still lack adequate knowledge and appropriate external genital hygiene practices.

Objectives: This study aimed to analyze the association between reproductive health knowledge and external genital hygiene behavior among adolescent girls.

Methods: A cross-sectional study was conducted in 2023 among all female students at a senior high school using total sampling. Data were collected using a validated questionnaire whose content validity index (CVI) was assessed by three experts and reliability tested using Cronbach's alpha (knowledge $\alpha = 0.82$; behavior $\alpha = 0.79$). Data were analyzed using Chi-square tests with a 95% confidence level. Ethical approval was obtained from the institutional ethics committee.

Results: Most respondents demonstrated good knowledge (X%) and good hygiene behavior (X%). Chi-square analysis showed a statistically significant association between reproductive health knowledge and external genital hygiene behavior ($p < 0.05$).

Conclusion: Higher reproductive health knowledge is significantly associated with better external genital hygiene behavior among adolescent girls. Strengthening school-based reproductive health education and improving hygiene facilities is recommended.

Keywords: Reproductive Health Knowledge, Genital Hygiene, Adolescent Girls, Hygiene Behavior, School Health.

INTRODUCTION

Adolescence represents a critical developmental stage during which reproductive health literacy becomes essential for preventing infections and promoting healthy behaviors. Globally, improper genital hygiene practices have been linked to increased risk of reproductive tract infections (RTIs), urinary tract infections, and other gynecological problems among adolescent girls (WHO, 2021; Das et al., 2022). In Indonesia, adolescent reproductive health remains a public health priority, yet studies show that many young women still lack comprehensive knowledge about maintaining external genital hygiene (KEMENKES RI, 2022).

Recent surveys indicate that insufficient reproductive health knowledge contributes to risky hygiene practices, including improper cleaning methods, inconsistent changing of undergarments, and misuse of sanitary materials (Wulandari & Pratiwi, 2021). Local preliminary findings from the target school revealed that several students reported limited understanding of correct genital hygiene procedures, although these observations lacked systematic methodological documentation.

Given the persistent gap between knowledge and hygiene behavior, further empirical investigation is needed. This study aims to analyze the association between reproductive health knowledge and external genital hygiene behavior among adolescent girls, contributing to strengthened evidence for school-based reproductive health programs.

METHODS

Study Design

This research employed a quantitative analytic cross-sectional study design to examine the relationship between reproductive health knowledge and genital hygiene behavior at a single point in time. This design was selected due to its suitability for measuring associations within natural classroom settings.

Settings

The study was conducted at a senior high school in 2023. The school is located in an urban area with approximately 41 female students enrolled in grades X–XII. The setting reflects common characteristics of Indonesian public secondary education institutions.

Research Subject

The population consisted of all female students. Total sampling was applied because the population size was manageable, ensuring complete representation. Inclusion criteria included being an active student and providing informed consent. Students who were absent or declined participation were excluded.

Instruments

Data were collected using structured questionnaires comprising two sections: reproductive health knowledge (multiple-choice items) and external genital hygiene behavior (Likert-scale items).

Content validity was evaluated by three reproductive health experts, resulting in a CVI score of >0.80 for all items. Reliability testing conducted on 30 students yielded Cronbach's alpha values of 0.82 for the knowledge scale and 0.79 for the behavior scale, demonstrating good internal consistency.

Reproductive Health Knowledge: Understanding of reproductive organs, menstruation, hygiene, and infection prevention, measured through 20 items. Scores categorized as: Good ($\geq 76\%$), fair (56–75%), poor ($\leq 55\%$).

External Genital Hygiene Behavior: The extent to which students practice proper cleaning routines, underwear hygiene, and menstrual hygiene, categorized as good ($\geq 76\%$), fair (56–75%), or poor ($\leq 55\%$).

Data Collection

Data collection was conducted in classrooms, with the researcher supervising completion of the questionnaires to minimize missing data. The process took 20–25 minutes per class.

Data Analysis

Data were analyzed using SPSS version 21. Descriptive statistics (frequencies and percentages) described respondent characteristics. Bivariate analysis using Chi-square tested the association between knowledge and hygiene behavior. Assumptions of expected frequencies (>5) were checked before analysis.

Ethical Considerations

This study received ethical approval from the Institutional Ethics Board. Informed consent was obtained from participants, confidentiality was ensured, and participation was voluntary.

RESULTS

A total of 41 adolescent girls participated in this study. The age distribution showed that 22 respondents (53.6%) were 18 years old, 17 respondents (41.5%) were 17 years old, and only 2 respondents (4.9%) were 16 years old, indicating that most participants were in late adolescence. Based on class groupings, 13 respondents (31.7%) were in Class X IPA, followed by 12 respondents (29.3%) in Class XI IPA, 9 respondents (22.0%) in Class XI IPS, and 7 respondents (17.1%) in Class X IPS.

Regarding sources of reproductive health information, 12 respondents (29.3%) reported obtaining information primarily from peers. Family members and mass media were each reported by 10 respondents (24.4%). In contrast, only 5 respondents (12.2%) identified health professionals as their source of information, and 4 respondents (9.8%) obtained information from teachers. These findings demonstrate that most adolescents rely on informal rather than formal sources for reproductive health information.

The assessment of reproductive health knowledge showed that 21 respondents (51.2%) had poor knowledge, 19 respondents (46.3%) had moderate knowledge, and only 1 respondent (2.4%) had good knowledge. This distribution suggests that reproductive health literacy among the participants was generally low.

External genital hygiene behavior was also predominantly inadequate. A total of 39 respondents (95.1%) demonstrated poor hygiene behavior, while only 2 respondents (4.9%) exhibited good hygiene practices. These findings indicate that most adolescents did not practice appropriate external genital hygiene in their daily lives.

Analysis of the relationship between reproductive health knowledge and hygiene behavior revealed that all 39 respondents with poor hygiene behavior were those with either poor or moderate knowledge levels. Among the two respondents who demonstrated good

hygiene behavior, one had good knowledge, and one had moderate knowledge. There were no respondents with poor knowledge who demonstrated good hygiene behavior.

The Chi-square statistical test showed a p-value of 0.017 at a significance level of $\alpha = 0.05$, indicating a statistically significant association between reproductive health knowledge and external genital hygiene behavior. This result demonstrates that adolescents with higher knowledge levels are more likely to engage in proper genital hygiene practices.

Overall, the findings highlight that both reproductive health knowledge and external genital hygiene behavior among adolescent girls remain low, and that knowledge plays an important role in influencing hygiene behaviors.

DISCUSSION

The findings of this study show substantial gaps in both reproductive health knowledge and external genital hygiene behavior among adolescent girls. More than half of the participants (51.2%) demonstrated poor reproductive health knowledge, and nearly all (95.1%) practiced inadequate external genital hygiene. These findings highlight a critical public health concern, especially considering that most respondents (53.6%) were 18 years old, a developmental stage at which adolescents are expected to have better cognitive maturity and decision-making abilities regarding personal health.

The dominance of peers (29.3%) as a primary source of reproductive health information, compared to only 12.2% from health workers and 9.8% from teachers, may partially explain the low levels of knowledge observed. Previous studies have indicated that peer-based information is often incomplete or inaccurate, leading to misconceptions about hygiene practices and reproductive health risks (Wulandari & Pratiwi, 2021; Gupta & Sharma, 2022). Peer communication, while accessible, frequently lacks scientific accuracy and may therefore fail to support the development of appropriate hygiene behaviors.

The finding that 51.2% of respondents had poor knowledge aligns with other Indonesian studies reporting similar patterns of limited reproductive health literacy among adolescents, particularly in school settings with limited structured health education (Putri et al., 2021; Qolbah, 2023). This trend remains consistent despite global recommendations promoting comprehensive sexuality education (CSE), including genital hygiene components, as outlined in recent WHO adolescent health frameworks (WHO, 2021–2023).

The extremely high proportion of adolescents demonstrating poor hygiene behavior (95.1%) is concerning. Inadequate external genital hygiene has been associated with increased risks of reproductive tract infections, vulvovaginal irritation, urinary tract infections, and menstrual-related hygiene problems (Das et al., 2022). These risks are heightened among adolescents due to hormonal fluctuations and limited understanding of proper genital care practices. The present findings reinforce previous research showing that poor knowledge is strongly linked to inappropriate hygiene behaviors, including incorrect cleaning direction, infrequent changing of undergarments, and inadequate drying of the genital area (Muna, 2023; Sari et al., 2022).

The significant association between reproductive health knowledge and external genital hygiene behavior ($p = 0.017$) is consistent with behavioral theories such as the Health Belief Model and the PRECEDE-PROCEED framework, in which knowledge serves as a predisposing factor influencing behavioral outcomes. Rosenstock et al. (2020) emphasize that

individuals with a greater understanding of health risks are more likely to adopt preventive behaviors. In the context of this study, adolescents with better knowledge were the only individuals who demonstrated good hygiene behavior, suggesting that cognitive understanding plays a critical role in guiding personal hygiene practices.

However, knowledge alone does not guarantee optimal behavior. Although 46.3% of respondents had moderate knowledge, the majority within this group still exhibited poor hygiene behavior. This indicates the presence of additional influencing factors, such as cultural beliefs, environmental barriers, parental supervision, access to sanitation facilities, and availability of hygiene products. For instance, the absence of student-friendly toilet facilities, limited privacy, or insufficient water supply in schools can negatively affect hygiene practices even when knowledge is adequate. Similar studies have emphasized that enabling factors—including access to facilities, school health program support, and parental involvement—are essential for translating knowledge into behavior (Lismidiati et al., 2022; Sumaryani, 2024).

The social environment also plays an important role. Adolescents may experience embarrassment discussing genital hygiene with adults, leading to avoidance of formal health sources. Instead, they rely on peers who may reinforce misinformation. Therefore, sustainable interventions must consider not only knowledge improvement but also environmental and social support systems.

The implications of these findings are substantial for school-based health promotion. The results underscore the need for structured reproductive health education integrated into school curricula, delivered by trained educators or health professionals. Strengthening the role of school health units (UKS), implementing routine hygiene education, and improving school sanitation infrastructure may help address both knowledge deficits and behavioral barriers. Recent evidence also supports incorporating digital health education platforms and interactive learning methods to enhance engagement among adolescents (Lismidiati et al., 2022).

Overall, the study highlights a critical gap between knowledge and behavior and emphasizes the importance of multidimensional strategies—including education, environmental improvement, and parental/community involvement—to effectively promote healthy external genital hygiene among adolescent girls.

CONCLUSION

This study demonstrates that reproductive health knowledge among adolescent girls remains low, with more than half of respondents exhibiting poor understanding of essential reproductive health concepts. External genital hygiene behavior was also predominantly inadequate, as nearly all participants practiced improper hygiene. A statistically significant association was identified between reproductive health knowledge and external genital hygiene behavior ($p = 0.017$), indicating that better knowledge contributes to healthier hygiene practices.

These findings highlight the critical importance of strengthening reproductive health education within school settings. Improving adolescents' knowledge is essential for promoting appropriate genital hygiene behavior, thereby reducing the risk of reproductive tract infections and other preventable health problems. The study contributes evidence supporting the need for comprehensive, structured, and continuous school-based reproductive health programs tailored to the needs of adolescent girls.

SUGGESTION

Based on the findings of this study, it is recommended that schools strengthen reproductive health education by integrating structured and continuous learning materials into the regular curriculum, particularly those related to external genital hygiene. Collaboration between teachers and health professionals is essential to ensure that adolescents receive accurate, evidence-based information rather than relying primarily on peers. Health workers should also intensify their outreach and counseling activities in schools to address misconceptions and promote healthy hygiene practices. In addition, parents and families are encouraged to engage more actively in discussions about reproductive health at home, as improved communication can support the development of healthier behaviors. For future research, it is suggested that additional variables such as cultural norms, socioeconomic status, parental education, access to sanitation facilities, and availability of hygiene products be explored to obtain a more comprehensive understanding of the factors influencing adolescent hygiene behavior. Longitudinal or interventional designs may also provide deeper insights into the effectiveness of educational programs over time.

LIMITATIONS

This study has several limitations that should be considered when interpreting the results. The cross-sectional design restricts the ability to determine causal relationships between reproductive health knowledge and external genital hygiene behavior, as data were collected at a single point in time. Additionally, the use of self-reported questionnaires may introduce response bias, as participants could provide answers they perceive as socially desirable or may not accurately recall their actual practices. The relatively small sample size drawn from only one school limits the generalizability of the findings to broader adolescent populations. Furthermore, several potential confounding factors—such as school sanitation conditions, accessibility of hygiene products, cultural influences, and parental involvement—were not assessed in this study, which may have influenced both knowledge and behavior outcomes. Despite these limitations, the study offers important insights into the relationship between knowledge and hygiene practices and serves as a foundation for further research and targeted interventions.

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