

Knowledge and Premarital Sexual Behavior among Adolescents at Vocational High Schools in Surakarta: A Cross-Sectional Study

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Abstract

Introduction: Sexual behavior among adolescents poses serious risks to their physical health, psychological development, and social well-being. Previous studies have consistently reported the occurrence of premarital sexual behavior among adolescents. Adequate knowledge is generally expected to play a preventive role by discouraging adolescents from engaging in premarital sexual practices. **Objective:** This study aims to examine the relationship between knowledge and premarital sexual behavior among adolescents at Vocational High School in Surakarta. **Method:** An analytical observational study with a cross-sectional design was conducted among students aged 16–17 years selected through simple random sampling. Data were collected using a structured questionnaire assessing behaviors indicative of sexual activity. Responses were scored using a five-point Likert scale with reverse scoring for negative statements. Total scores of 7–21 indicated risky sexual behavior, whereas scores >21 indicated non-risky behavior. Most respondents demonstrated a good level of knowledge. **Result and Discussion:** The majority of respondents demonstrated a good level of knowledge. 3.4% of respondents engaged in risky sexual behavior, while 96.6% exhibited non-risky sexual behavior. The analysis of the relationship between knowledge and risky sexual behavior yielded a *p*-value greater than 0.05, indicating that there was no significant association between knowledge and adolescent sexual behavior. **Conclusions:** There was no significant relationship between knowledge and premarital sexual behavior among adolescents.

Introduction

Sexual behavior refers to sexual drives originating from both internal and external factors within an individual, arising from sexual urges or activities aimed at achieving pleasure of the sexual organs. Such behaviors range from fantasizing, holding hands, kissing, and hugging to engaging in sexual intercourse or free sex (Rahmadhenta & Margiana, 2023). Early engagement in sexual behavior among adolescents has numerous adverse consequences. Sebayang stated that premarital sexual behavior in adolescents leads to various negative outcomes. Adolescents are at risk of contracting sexually transmitted infections (STIs) such as gonorrhea, syphilis, herpes simplex (genital), chlamydia, and HIV/AIDS. Other health consequences include fertility disorders, cervical cancer, unintended pregnancy, and abortion, which may result in infertility or even death. Additional risks include premature birth, congenital abnormalities, and anemia. The impacts of premarital sexual behavior are not limited to physical health but also extend to adolescents' social lives. Adolescents who experience pregnancy at a young age may face school dropout, early marriage, and even divorce. Psychological consequences include feelings of guilt, anger, sadness, shame, stress, self-hatred, and loss of hope for the future (Nur et al., 2024). Other potential effects include depression, low self-esteem, reproductive organ disorders, sexual addiction, regret, decreased academic achievement, and sexual deviation (Anisah Rahmah Firdaus; et al., 2023).

Despite the well-documented risks associated with premarital sexual behavior, these dangers do not appear to deter adolescents from engaging in such practices. Numerous studies conducted across Indonesia indicate that adolescents have engaged in premarital sexual behaviors. (Asmin et al., 2023) in a study of senior high school students in Ambon City, found that 10.8% of adolescents had engaged in premarital sexual intercourse, with 61.4% of male adolescents and 26.4% of female adolescents reporting premarital sexual behavior. A study conducted at SMK Bakti Purwokerto involving 127 eleventh-grade students revealed that 92% of respondents had engaged in sexual behavior such as holding hands, 88% had walked hand in hand, and 76% had hugged their partners (Rahmadhenta & Margiana, 2023).

Similarly, a study by (Hamzah & Hamzah, 2020) at SMA 1 Kotamobagu found that 31.9% of respondents exhibited risky premarital sexual behavior. Specifically, 63.9% reported hugging members of the opposite sex, 12.4% had kissed on the lips, 9.7% had touched sensitive body parts such as the genitals, breasts, or neck, and 1% had engaged in genital rubbing or petting. Furthermore, (Rizkianti et al., 2020) in a study involving 75 schools across 26 provinces in Indonesia, reported that 5.3% of students had engaged in sexual intercourse. Among those who were sexually active, 72.7% of male adolescents and 90.3% of female adolescents reported having their first sexual intercourse before the age of 15, and approximately 60% reported having multiple sexual partners.

Premarital sexual behavior was also observed among university students, as reported by (Asfia & Ferial, 2023) in a study conducted at a private higher education institution in Banten. The findings showed that 51.25% of respondents engaged in risky sexual behaviors, ranging from holding hands to manually stimulating their own genitals. In addition, 11.25% of respondents reported having sexual intercourse with more than one partner and engaging in sexual intercourse without using contraceptive methods.

Various factors may contribute to adolescents' engagement in premarital sexual behavior, one of which is knowledge. Premarital sexual knowledge refers to all information understood regarding sexual activities conducted prior to entering a marital relationship (Pratama et al., 2021). Adequate knowledge of sexual behavior is expected

to prevent adolescents from engaging in deviant behaviors and from becoming involved in sexual-related problems (Aswadi et al., 2024). (Hamzah & Hamzah, 2020) demonstrated a relationship between knowledge and sexual behavior. The higher levels of premarital sexual knowledge, the lower risk of engaging in deviant sexual behaviors. (Pratama et al., 2021). A significant relationship between the level of knowledge and premarital sexual behavior among adolescents has been reported by (Purwanti & Faizah, 2025)

However, other studies have shown contrasting results, suggesting that good knowledge about the risks of premarital sexual behavior does not necessarily prevent adolescents from engaging in such behavior. A study conducted at SMAN 2 Bone reported no relationship between knowledge and adolescents' sexual behavior (Farwati et al., 2023). Similar findings were reported by (Fitriwati, 2022) who found no association between premarital sexual behavior and knowledge. There was no significant difference between adolescents with good and poor levels of knowledge in terms of engaging in risky sexual behavior. Notably, the number of adolescents with good knowledge who engaged in risky sexual behavior was higher than those with poor knowledge who exhibited similar behaviors (Asfia & Ferial, 2023).

Based on the foregoing discussion, the present study aims to re-examine premarital sexual behavior among eleventh-grade students at a private Vocational High School (SMK) in Surakarta, as well as their knowledge of premarital sexuality, in order to investigate the relationship between premarital sexual behavior and students' level of knowledge.

Method

This study employed an analytical observational design with a cross-sectional approach to examine the relationship between knowledge and sexual activity among adolescents. The study population consisted of all vocational high school (Sekolah Menengah Kejuruan/SMK) students aged 16–17 years in the study area. Participants were selected using simple random sampling to ensure equal selection probability and to minimize selection bias. Inclusion criteria included active students aged 16-17 years who provided informed consent, while exclusion criteria were absence during data collection or incomplete questionnaire responses.

Data were collected using a structured self-administered questionnaire developed based on a literature review on adolescent sexual behavior. The instrument included positively and negatively worded statements assessing activities potentially leading to sexual behavior and was measured using a five-point Likert scale. Total scores were calculated by summing all item responses, with lower scores indicating a higher tendency toward risky sexual behavior. Scores ranging from 7 to 21 were categorized as risky sexual behavior, while scores above 21 were classified as non-risky behavior.

Data collection was conducted at the school under researcher supervision, ensuring confidentiality and voluntary participation. After inspection of the questionnaires, the questions were coded, entered and analysed using SPSS. The sexual behaviors and socio-demographic characteristics of the participants were summarized using frequencies and percentages. Statistical analysis was performed using appropriate software, including descriptive and inferential analyses aligned with the study objectives, with a significance level set at $p < 0.05$.

Result and Discussions

1. Result

The respondents in this study consisted of 119 students, of whom 7.6% (n = 9) were male and 92.4% (n = 110) were female. Among the respondents, 45.4% reported having previously participated in counseling or educational sessions related to reproductive health or adolescent sexual behavior, while 54.6% stated that they had never received counseling or education concerning adolescent sexual behavior. The table below indicates that 3.4% of respondents engaged in risky sexual behavior, while 96.6% exhibited non-risky sexual behavior.

Table 1
Respondent Characteristic (n=119)

Variables	Frequency	Percentage (%)
Gender		
Male	9	7.6
Female	110	92.4
Education/Counselling		
Yes	54	45.4
No	65	54.6
Risky Sexual Behavior		
Risky Sexual Behavior	4	3.4
Safe Sexual Behavior	115	96.6
Total	119	100

The distribution of sexual behaviors among respondents showed that the most commonly reported activity was holding hands, reported by 31.9% of participants. Less intimate behaviors were substantially less prevalent, with 9.2% reporting hugging and only 3.4% reporting kissing. More advanced sexual behaviors were reported by a small proportion of respondents; 2.5% indicated engaging in activities beyond kissing, and an equal proportion (2.5%) reported attempting to engage in sexual intercourse. Overall, these findings suggest that the majority of adolescents exhibited low-risk sexual behaviors, while only a limited fraction reported involvement in risky sexual behavior.

Table 2
Sexual Behavior of Adolescents

Sexual Behavior	Percentage
Holding hands	31.9
Hugging	9.2
Kissing	3.4
Engaging in activities beyond kissing	2.5
Attempting to engage in sexual intercourse	2.5

The results indicate that the respondents generally had a good level of knowledge, with a mean \pm standard deviation of 28.4 ± 3.7 . The Chi-square analysis showed a no significant association between knowledge and risky sexual behavior status, as indicated by a p-value greater than 0.05 ($p\text{-value} = 0.099$).

2. Discussion

The findings of this study indicate that there is no significant relationship between the level of sexual knowledge and risky premarital sexual behavior ($p > 0.05$). The results of the present study are consistent with previous research demonstrating that good sexual

knowledge does not necessarily lead to safe sexual behavior (Andrianto et al., 2024; Nurlathifah Bahdad, Vera D Towidjojo, Puspita Sari, 2023; Rozana, 2023; Savitry & Sari, 2025). These studies emphasize that knowledge functions more as a supporting factor rather than a primary determinant.

This study also assessed the number of respondents who reported having received information related to premarital sexual behavior. 45.4% of respondents indicated that they had participated in counseling or educational activities related to premarital sexual behavior. Theoretically, educational interventions may play a role in shaping adolescents' knowledge, attitudes, and perceptions regarding sexual behavior. However, in this study, the potential influence of such educational exposure could not be adequately assessed, due to the limited number of respondents reporting premarital sexual behavior (n = 4).

Conversely, this result of this study contrasts with several previous studies reporting a significant association between reproductive health or sexual knowledge and adolescents' sexual behavior (Amalia et al., 2023; Fahriani & Irawati, 2020; Salsabilla et al., 2025; Sri & Yanni, 2024). These studies suggest that adolescents with lower levels of knowledge tend to have a higher risk of engaging in risky sexual behavior.

Nevertheless, it cannot be concluded that adolescents do not require knowledge related to sexuality. Sexuality education can, in fact, have positive value for adolescents (Hanifah et al., 2022). Knowledge is one of the factors influencing premarital sexual behavior; however, it does not act as a direct determinant (Sari et al., 2022). When adolescents who have received sexual education continue to engage in deviant behaviors, this may be attributed to inadequate internalization of the information provided or insufficient guidance from others in their environment (Hanifah et al., 2022). The discrepancy between these findings indicates that risky sexual behavior is variable in nature and that premarital sexual behavior is influenced by multiple, highly complex factors. Several factors frequently discussed in the previous studies include emotional instability during adolescence, involvement in romantic relationships with the opposite sex, and adolescents' psychosocial development, though this present study does not measure those mentioned factors directly and therefore cannot be empirically evaluated.

Adolescence represents a critical stage of human development, spanning the age range of 10–24 years (Sari et al., 2022). During this period, personality and character begin to take shape, accompanied by various developmental changes such as attraction to the opposite sex, falling in love, and the maturation of reproductive organs (Hanifah et al., 2022). The study by (Anisah Rahmah Firdaus; et al., 2023) reported that adolescents engage in premarital sexual intercourse spontaneously, without adequate preparation or careful consideration, often driven by romantic involvement. Furthermore, emotional instability during adolescence may encourage individuals to experiment with new experiences, including premarital sexual behavior, without fully considering its potential consequences. The previous studies above suggest that adolescents who possess adequate knowledge of sexuality may still engage in premarital sexual behavior when confronted with emotionally charged situations; however, this explanation cannot be empirically examined within the scope of this study.

Adolescence has been described as a development phase characterized by vulnerable and emotionally unstable in which individuals actively search for self-identity and sexual identity. Misconceptions and inadequate understanding may inadvertently lead adolescents to engage in deviant sexual behaviors (Hanifah et al., 2022). Therefore, guidance and supervision from schools, parents, and relevant stakeholders are essential to ensure that adolescents receive accurate and appropriate sexual education.

The present study also found that the majority of respondents had previously participated in sexuality-related counseling or educational programs. However, there remains a need to further develop and improve the content and delivery of information provided to adolescents. The findings of this study suggest that higher levels of knowledge were not significantly associated with risky premarital sexual behavior in this sample. This does not imply that knowledge is unimportant, but rather that knowledge may be insufficient to explain behavioral variation. Sexual education or counseling alone is unlikely to produce meaningful behavioral change. More effective approaches are required, particularly those that integrate psychological and cultural dimensions into adolescent sexuality education. Schools, governmental institutions, and educators must identify the primary determinants of adolescent sexual behavior and prioritize these determinants as the central focus of sexuality education.

Conclusion

The relationship between knowledge and adolescent sexual behavior has been extensively examined in previous studies, yielding contradictory conclusions. The findings of the present study reinforce the evidence that there is no significant relationship between knowledge and risky sexual behavior among adolescents. Various supporting factors contribute to adolescents' engagement in sexual behavior. Nevertheless, this does not imply that education or knowledge is unnecessary. Adolescents continue to require sexuality education; however, future education should take additional influencing determinants into account so that adolescents are equipped with strategies to manage other contributing determinants, such as emotional management. Through such comprehensive approaches, premarital sexual behavior among adolescents may be more effectively prevented.

Limitation

This study has several limitations. The prevalence of premarital sexual behavior in this study was low ($n = 4$), which limited the statistical power to examine the association between knowledge and premarital sexual behavior. Due to the sensitive nature of the topic, the researchers were also unable to include detailed questions regarding risky sexual behaviors in the questionnaire. In addition, all responses were self-reported, and students may have provided answers that conformed to social desirability norms.

The scope of this study was limited to senior high school students in a municipality; therefore, the findings may not be generalizable to all adolescents in Indonesia. This study also had an imbalance in the number of male and female respondents, and this substantial gap may have influenced the study results. Lastly, although this study examined respondents' participation in sexual behavior education, it did not explore the characteristics of the education in detail, such as duration, content, or delivery methods. Therefore, further research is needed to better understand the effects and relationships between sexual education and sexual behavior among adolescents.

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