



(RESEARCH ARTICLE)



The relationship between the level of knowledge about sexually transmitted infections and dating behaviors among university students in Malang

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Abstract

Background: The increasing prevalence of Sexually Transmitted Infections (STIs) among university students in Malang has become a serious concern, especially considering the high incidence rates within the young adult age group. Knowledge about STIs, including their causes, modes of transmission, and prevention, plays a crucial role in reducing risky behaviors that contribute to the spread of these infections.

Method: This research employed an observational analytic design with a cross-sectional approach. A total of 385 students aged 18–21 years, selected through purposive sampling, participated as respondents. Data were collected using questionnaires that measured STI knowledge and dating behaviors. The data were analyzed using the Rank Spearman test to determine the relationship between the two variables.

Results: The study found that the majority of respondents had a moderate level of STI knowledge (54.5%) and a high level (26.8%). However, 53.5% of respondents still engaged in risky dating behaviors, including activities such as deep kissing, petting, and sexual intercourse. Statistical analysis yielded a p-value of 0.000 ($p < 0.05$) and a correlation coefficient of 0.370, indicating a significant relationship with a moderate strength of association between STI knowledge levels and dating behaviors.

Conclusion: There is a significant relationship between STI knowledge levels and dating behaviors among university students in Malang

Keywords: Sexually Transmitted Infections; Dating Behaviors; Knowledge; University Students; Malang

1. Introduction

Adolescence is a period of rapid growth and curiosity, often leading to risky behaviors [1]. Sexually transmitted infections (STIs) have become a major public health concern, particularly among young adults aged 15–24 [2]. Urban centers like Malang, with its large population of university students, are especially vulnerable to the transmission of STIs [3]. Despite existing health campaigns, the rise in STI cases among students in Malang highlights the need for improved awareness. Many students lack sufficient knowledge about STIs, increasing their likelihood of engaging in risky dating behaviors [4]. Research consistently shows a link between STI knowledge and safer sexual behaviors [5][6]. However, studies often neglect the specific influence of STI knowledge on dating behaviors in Indonesia, particularly among university students [7]. This gap in the literature underscores the need for localized research to better understand how cultural and social dynamics affect STI awareness and dating practices.

This study seeks to address this gap by examining the relationship between STI knowledge and dating behaviors among university students in Malang. By identifying key areas where knowledge deficits contribute to risky behaviors, the

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research aims to guide educational programs tailored to the needs of local students. The growing prevalence of STI cases among young adults in Malang underscores the urgency of this work, highlighting the need for targeted, evidence-based interventions to address risky behaviors and promote public health [8]. The primary aim of this study is to analyze the relationship between STI knowledge and dating behaviors. Specifically, it seeks to assess students' STI knowledge levels, identify risky and non-risky dating behaviors, and evaluate how knowledge influences these behaviors. This research has significant implications for public health initiatives and university programs, offering actionable insights to reduce STI rates and foster healthier relationships among young adults in Malang.

2. Material and methods

This study used an observational analytic design with a cross-sectional approach to examine the relationship between STI knowledge levels and dating behaviors among university students in Malang. The population included active students during the 2024/2025 academic year. Using purposive sampling, 385 respondents aged 18–21 years were selected based on inclusion criteria (active status, willingness to participate, and specified age range) and exclusion criteria (pregnancy). The sample size was calculated using the Lemeshow formula at a 95% confidence level. Data collection employed structured questionnaires distributed via Google Forms, consisting of three sections: respondent characteristics, STI knowledge, and dating behaviors. The STI Knowledge Questionnaire included 28 items (19 positive and 9 negative statements) scored using the Guttman scale, while the Dating Behavior Questionnaire contained 15 Likert-scale items. The tools, validated with a Cronbach's alpha of 0.89, ensured reliability and validity. Data were processed through editing, coding, tabulation, and entry into statistical software. Univariate analysis described the frequency distribution of variables, while bivariate analysis using the Spearman Rank correlation test assessed the relationship between STI knowledge and dating behaviors. Correlation strength was categorized as very weak (0.00–0.25), moderate (0.26–0.50), strong (0.51–0.75), or very strong (0.76–0.99). SPSS version 26 was used for statistical analysis. The study utilized Google Forms for questionnaire distribution to ensure anonymity and accessibility. References included Kartika (2023) for questionnaire validation and Lemeshow et al. (1997) for sample size determination.

3. Results

3.1. Respondent Characteristics

Table 1 Respondent Characteristics

Number	Respondent Characteristics	Frequency	Percentage (%)
Gender			
1.	Male	152	39,5
2.	Female	233	60,5
Age			
1.	18 years	49	12,7
2.	19 years	102	26,5
3.	20 years	111	28,8
4.	21 years	123	31,9
Study Program			
1.	Non-Health	270	70,1
2.	Health	115	29,9
Living Arrangement			
1.	With parents	201	52,2
2.	With guardians	44	11,4
3.	Alone	140	36,4
Religion			

1.	Islam	264	68,6
2.	Christian	56	14,5
3.	Catholic	38	9,9
4.	Hindu	11	2,9
5.	Buddhist	8	2,1
6.	Confucianism	8	2,1
Religious Observance			
1.	Very obedient	103	26,8
2.	Obedient	207	53,8
3.	Moderately obedient	57	14,8
4.	Less obedient	13	3,4
5.	Not obedient	5	1,3
Relationship Status			
1.	Currently in a relationship	220	57,1
2.	Previously in a relationship	152	39,5
3.	Never been in a relationship	13	3,4
Source of Information			
1.	Internet	259	67,4
2.	Teachers	71	18,5
3.	Parents	28	7,3
4.	Friends	15	3,9
5.	Never received information	11	2,9

Table 1 highlights the respondents' characteristics, including gender, age, study program, living arrangement, religion, religious observance, relationship status, and sources of information. Over 60% of respondents were female, and more than 60% were aged 20 or 21. The majority (70.1%) were enrolled in non-health-related study programs. Regarding living arrangements, more than half lived with their parents. In terms of religion, 68.6% identified as Muslim. Over 80% of respondents reported being obedient or very obedient in practicing their religion. For relationship status, more than half were currently in a relationship, while only 3.4% had never been in one. The internet was the primary source of information about sexually transmitted infections (STIs) for 67.4% of respondents, while 2.9% reported never receiving any information about STIs.

3.2. Univariate Analysis

Table 2 Sexually Transmitted Infections Knowledge Levels

Number	Knowledge Level	Frequency (n)	Percentage (%)
1.	High	103	26,8
2.	Moderate	210	54,5
3.	Low	72	18,7
Total		385	100

The average score of respondents is 19.26, with the lowest score being 9 points and the highest score being 26 points. This indicates that respondents' knowledge falls into the "moderate" category. Additionally, Table 2 shows that the majority (54.5%) of respondents have moderate knowledge about Sexually Transmitted Infections (STIs), while 26.8% have high knowledge, and only 18.7% fall into the low knowledge category.

Table 3 Dating Behaviors

Number	Dating Behaviors	Frequency (n)	Percentage (%)
1.	Non-Risky	179	46,5
2.	Risky	206	53,5
Total		385	100

Based on Table 3, the data show respondents dating behaviors, with more than 50% engaging in risky dating behaviors, including deep kissing, oral sex, petting, and sexual intercourse. Meanwhile, 46.5% or 179 respondents engage in non-risky dating behaviors.

3.3. Bivariate Analysis

Table 4 The Relationship Between Sexually Transmitted Infections Knowledge Levels and Dating Behaviors Among University Students in Malang

Knowledge Level	Dating Behaviors						p-value
	Non-Risky		Risky		Total		
	F	%	F	%	F	%	
High	74	19,2	29	7,5	103	26,7	0,000
Moderate	93	24,2	117	30,4	210	54,5	
Low	12	3,1	60	15,6	72	18,7	
Total	179	46,5	206	53,5	385	100	

Table 4 presents data on the relationship between knowledge levels about Sexually Transmitted Infections (STIs) and dating behaviors among students in Malang. The analysis reveals that 19.2% (74 respondents) with high knowledge tend to engage in non-risky dating behaviors, while 7.5% (29 respondents) with high knowledge engage in risky behaviors. Among respondents with moderate knowledge, 24.2% (93 respondents) practice non-risky dating, whereas 30.4% (117 respondents) engage in risky behaviors. In the low knowledge group, 3.1% (12 respondents) exhibit non-risky behaviors, while 15.6% (60 respondents) engage in risky ones. A Rank Spearman test yielded a correlation coefficient of 0.370**, indicating a moderate relationship between knowledge levels and dating behaviors. The p-value of 0.000, which is less than the significance level of 0.05, confirms this relationship is statistically significant. These findings suggest that knowledge levels significantly influence dating behaviors. Lower knowledge levels are associated with a higher likelihood of engaging in risky dating behaviors, whereas higher knowledge levels are linked to safer dating practices.

4. Discussion

4.1. The Relationship Between the Level of Knowledge About Sexually Transmitted Infections and Dating Behaviors Among University Students in Malang

According to Notoatmodjo, knowledge is a cognitive component that plays an important role in shaping individual attitudes and behaviors, including interpersonal relationships [7]. Knowledge about Sexually Transmitted Infections (STIs) includes understanding their definition, types, modes of transmission, symptoms, and prevention methods [3]. The World Health Organization states that sexual health education is effective in reducing the incidence of STIs, especially among adolescents and young adults [2]. The results of this study showed that out of 385 respondents, most had a moderate (54.5%) and high (26.8%) level of STI knowledge; however, 53.5% still engaged in risky dating behaviors. The Rank Spearman test analysis revealed a significant relationship between the level of STI knowledge and students' dating behaviors in Malang (p-value = 0.000; r = 0.370), indicating a moderately strong correlation [9].

Risky dating behaviors include unsafe sexual behaviors such as deep kissing, oral sex, petting, and sexual intercourse, which may increase the risk of STI transmission [3]. The findings of this study are consistent with previous studies by Kusdianto and Fitriyah and Kartiningrum and Rachmah, which found that better STI knowledge tends to encourage

safer dating behaviors [4][6]. However, this study contradicts the findings of Kartika (2024), Fatmaningrum et al. (2024), and Nursiah et al. (2023), which reported that reproductive health knowledge was not significantly associated with adolescents' sexual behavior. These differences indicate that, in addition to knowledge, other factors also influence students' dating behaviors, such as social norms, peer pressure, partner influence, and emotional conditions [5].

In addition to knowledge, students' dating behaviors are also influenced by access to information, religiosity, communication with parents, and the social environment [10]. Most respondents came from non-health majors and obtained STI-related information through the internet, which increases the risk of misinformation due to low digital literacy. Although most respondents reported having a high level of religiosity, this was not always reflected in their daily behavior. Therefore, a multidimensional approach is needed through comprehensive sexual health education, improved family communication, and support from educational institutions and healthcare facilities [11]. Public health centers in Malang City have also provided various STI prevention services for students, such as extra-time services and STI clinics, to improve access to reproductive health services among young people.

5. Conclusion

The study on the relationship between knowledge about Sexually Transmitted Infections (STIs) and dating behaviors among university students in Malang revealed several key findings. The majority of respondents had a moderate level of knowledge about STIs (54.5%), followed by high (26.8%) and low (18.7%) levels. Their knowledge covered definitions, types, transmission methods, symptoms, and prevention of STIs. However, despite having sufficient knowledge, its application in daily behavior remained limited. More than half of the respondents (53.5%) engaged in risky dating behaviors, including deep kissing, oral sex, petting, and unprotected sexual intercourse, while 46.5% practiced relatively safer behaviors. A bivariate analysis revealed a significant relationship between STI knowledge and dating behaviors, with a correlation coefficient of 0.370 (p -value < 0.05). However, the influence of knowledge on dating behaviors was limited, suggesting other contributing factors.

External factors, such as educational background, religiosity, and social influence, also affected dating behaviors. Most respondents (70.1%) were from non-health-related fields, potentially limiting their access to comprehensive reproductive health education. Additionally, while over 80% claimed to be highly religious, religiosity alone did not fully prevent risky dating behaviors. The study concludes that knowledge about STIs alone is insufficient to drive behavioral change among students. A more holistic approach is needed, including experiential education, counseling, health campaigns, and community-based interventions. These efforts can encourage healthier behaviors and reduce the risks associated with unsafe dating practices.

Compliance with ethical standards

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Statement of conflict of interest

The authors declare no conflict of interest.

Statement of ethical approval

This study has passed the ethical review and obtained approval from the Research Ethics Committee of Airlangga University Hospital with the number: 08/EC/KEPK/FKUA/2025.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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