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Research Article

Determinants of Interest and Behavior Among Adolescents in Accessing Reproductive Health Services through Social Media Platforms: A Study of Health Students in Cirebon City

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A B S T R A C T

Introduction: Adolescent reproductive health (ARH) remains a critical global issue, with social media serving as a primary yet complex information channel for youth. Understanding how health students, as future professionals, engage with these platforms for ARH is essential.
Objectives: This study aimed to analyze the determinants of interest and behavior among health students in Cirebon City in accessing ARH services through social media platforms.
Method: A cross-sectional study was conducted from January to March 2025, involving 150 health students from three institutions selected via proportionate stratified random sampling. Data were analyzed using descriptive statistics and bivariate tests (t-test, ANOVA, Pearson correlation, Chi-Square).
Result: The results revealed that knowledge ($r = 0.612$) and trust ($r = 0.489$) were strongly and positively correlated with both interest and behavior ($p < 0.001$). Gender ($p = 0.015$) and academic program ($p = 0.016$) were also significantly associated with interest. A notable gap was identified between students' high interest and their more moderate actual service-seeking behavior.
Conclusion: To effectively leverage social media for ARH, interventions must cultivate digital health literacy and trust. Addressing the practical barriers that create an "interest-behavior gap" is crucial for empowering future health professionals.

Keyword: Adolescent Reproductive Health, Digital Health Literacy, Health Students, Social Media.

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Introduction

Adolescent reproductive health (ARH) remains a critical issue at both global and national levels, particularly in Indonesia, where the unique interplay of socio-cultural and political dynamics significantly shapes the ARH landscape. Globally, over 1.5 billion adolescents aged 10 to 25 face various challenges related to sexual and reproductive health, influenced by individual, social, and environmental factors (1). These challenges include issues such as teenage pregnancies, out-of-wedlock childbirth, sexually transmitted infections (STIs), and limited access to adequate and valid reproductive health information (2,3). The global health community, including the World Health Organization (WHO), emphasizes the importance of addressing these issues through comprehensive data collection and context-specific, evidence-based interventions (4,5).

In the Indonesian context, ARH is shaped by a complex intersection of traditional cultural values, religious norms, and modern influences. The country has undergone a series of political and social transformations that have influenced the formulation and implementation of adolescent health policies. In 2001, Indonesia was positioned to adopt progressive ARH policies aligned with international frameworks. However, the rise of Middle Eastern-inspired fundamentalism and regional separatist movements led to a retreat from such reforms, resulting in a policy vacuum and heightened health risks among adolescents (6). This political landscape allows conflicting forces traditionalism, westernization, and religious conservatism to simultaneously influence adolescents' sexual and reproductive behaviors.

Indonesia's cultural diversity further complicates ARH efforts. In many rural and agrarian regions, local customs and beliefs often considered outdated continue to influence reproductive health practices, with family, environmental, and cultural factors playing crucial roles (7). For example, in Bali, rigid gender norms and deeply embedded social taboos constitute significant barriers to adolescents' access to sexual and reproductive health (SRH) information, reflecting broader national challenges (8). The persistently high birth rate among individuals aged 15–19 underscores the lack of understanding among adolescents regarding reproductive health and family planning (9).

National responses to these challenges have included programs such as *Generasi Berencana (GenRe)* and *Pelayanan Kesehatan Peduli Remaja (PKPR)*, which aim to improve reproductive health education and empower young people. However, these programs continue to face several persistent obstacles, including low levels of awareness, insufficient institutional support, and communication gaps among stakeholders (9). Peer education initiatives have demonstrated potential in raising awareness, with adolescents acting as trusted communicators among their peers; nonetheless, these efforts require further strengthening through systemic support and sustainable funding (10).

Social media exerts a complex and dual influence on adolescent health behavior, encompassing both detrimental and beneficial dimensions. On one hand, numerous studies have shown a strong correlation between social media use and adverse mental health outcomes, including increased levels of anxiety, depression, loneliness, and low self-esteem (11–14). Interactions involving smartphones such as excessive screen time, exposure to appearance-focused content, and the prevalence of cyberbullying, negative speech, and unethical commentary have been identified as aggravating factors (14). On the other hand, social media also functions as a powerful medium for support and connectivity, particularly in times of crisis. During the COVID-19 pandemic, digital platforms allowed adolescents to maintain social interactions, access peer support, and alleviate feelings of isolation (11–13). This paradox underscores the need for a balanced and nuanced understanding of the impact of social media on adolescent mental health, along with the development of strategies that can effectively mitigate risks while optimizing its potential benefits.

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Machleid et al. (2020) emphasized that many health students acknowledge the growing relevance of digital health and express a strong interest in receiving comprehensive education in this field, particularly in areas such as digital communication, health information literacy, and ethical considerations (15,16). Their digital fluency positions them as effective health promoters in online environments. Health students can utilize social media to disseminate accurate health information, raise public awareness, and participate in constructive dialogue around health-related issues (17). With adequate training and support, they can design and lead innovative digital campaigns that resonate with their peers and broader communities. Given the inherent risks and opportunities associated with social media, strategic policy and educational interventions are imperative. Policymakers must prioritize the enhancement of digital literacy among adolescents, equipping them to critically evaluate online content and use social media responsibly, thereby minimizing exposure to harmful influences. Simultaneously, higher education institutions must integrate comprehensive digital health education into medical and health science curricula. Such curricula should not only address the technical aspects of digital tool utilization but also incorporate training in digital ethics, data privacy, and responsible technology use. By cultivating a digitally literate and ethically conscious health workforce, we can fully harness the potential of digital technologies to support public health. Health students equipped with these competencies can act as catalysts for change in the digital health landscape, bridging the gap between validated health information and the communities that need it most.

Although health students are identified as potential future health promoters, they themselves stand at a critical crossroads. As late adolescents or emerging adults, they belong to the demographic that most actively engages with social media to seek information, including sensitive topics such as reproductive health (18). At the same time, they are expected to serve as the front line in disseminating valid and evidence-based health information. This situation creates a significant sense of urgency: if these future health professionals lack the appropriate interest and behavior in accessing valid adolescent reproductive health (ARH) information and services through digital platforms, they may not only be at personal risk but could also unintentionally contribute to the spread of misinformation in the future (19).

The limited effectiveness of conventional health programs, such as the *Adolescent Care Health Services* (Pelayanan Kesehatan Peduli Remaja/ PKPR) in reaching adolescents further pushes young people, including health students, into unregulated digital spaces. This highlights the need to better understand their behavior as a priority for targeted educational and policy interventions (20). This condition underscores a clear research gap. Most existing studies in Indonesia tend to focus on general adolescent reproductive health behavior or broadly evaluate the effectiveness of reproductive health programs. Research specifically examining the determinants of interest and behavior among health students in using social media for ARH purposes remains scarce. While previous studies have acknowledged the popularity of social media as an information source, they have yet to explore in depth the key determinants such as knowledge, attitudes, information exposure, and subjective norms, that shape service-seeking behavior within this unique sub-population. Moreover, existing research is often concentrated in the capital or major metropolitan cities. By focusing on Cirebon City, a growing urban area that serves as a regional hub for education and healthcare with its own distinctive socio-cultural characteristics, this study aims to provide contextual and empirically grounded insights to support the development of digital health interventions in secondary cities across Indonesia (21).

Based on the aforementioned discussion, the objective of this study is to analyze the factors influencing the interest and behavior of health science students in accessing reproductive health services through social media platforms in Cirebon City in 2025. Specifically, this research aims to identify the extent to which levels of knowledge, attitudes, and exposure to reproductive health information via social media contribute to service-seeking behavior and the pursuit of valid information among emerging adults. Furthermore, the study seeks to explore the prevailing preferences for digital

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platforms, as well as the barriers and opportunities associated with their utilization as channels for reproductive health promotion. The findings of this study are expected to provide an evidence base for higher education institutions, healthcare providers, and policymakers in designing targeted, digital-based educational interventions that align with the characteristics and needs of the younger generation in urban settings such as Cirebon City.

Method

Research Design

This study was designed using a quantitative research approach with a cross-sectional study design. This design was selected due to its relevance in addressing the research objective, which is to analyze the factors influencing students' interest and behavior at a single point in time (22). The approach enables simultaneous measurement of both dependent variables (interest and behavior) and independent variables (knowledge, social media exposure, beliefs, perceptions, and respondent characteristics), as well as examination of the associations among these variables. Data collection was conducted during the period of January to March 2025 in Cirebon City.

Population and Sample

The target population of this study comprised all active undergraduate students enrolled in health-related academic programs in Cirebon City. The accessible population included students from three higher education institutions:
(1) the Diploma III in Midwifery and Bachelor of Occupational Health and Safety (D4 K3) programs at Bhakti Pertiwi Husada Health Polytechnic;
(2) the Bachelor of Nursing and Bachelor of Public Health programs at STIKes Cirebon; and
(3) the Bachelor of Nutrition program at Universitas Muhammadiyah Cirebon.

Given the exploratory nature of this study for preliminary mapping, the target sample size was set at 150 respondents. This number was justified using a formal calculation based on the proportion estimation formula for large populations proposed by Lemeshow (23), as follows:

$$n = \frac{Z^2 \,.\, P \,.\, (1 - P)}{d^2}$$

Notes:

- n = Minimum required sample size.
- Z = Standard score corresponding to the chosen confidence level. For a 95% confidence level, Z = 1.96.
- P = Estimated proportion of the population. In the absence of specific prior data, a conservative estimate of 0.5 (50%) was used to yield the maximum required sample size.
- d = Margin of error or desired precision. For this exploratory study, a margin of 8% (0.08) was applied

Sample size calculation: $n = (1.96)^2 \cdot 0.5 \cdot (1-0.5) / (0.08)^2 = 3.8416x0x25/0.0064 = 150.06$.

The sample size calculation resulted in a minimum requirement of 151 respondents. Accordingly, the targeted sample of 150 participants was deemed methodologically justifiable for the purpose of this exploratory study.

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The sampling technique employed was *Proportionate Stratified Random Sampling*, which ensures proportional representation from each academic program (stratum) based on the number of students enrolled, thereby enhancing the external validity of the research findings (24). The sampling procedure included obtaining the list of active students (sampling frame) from each study program, calculating the sample allocation per stratum, and randomly selecting respondents from the respective lists.

The inclusion criteria for respondents were as follows:
(a) currently active students in semesters 3 to 7,
(b) aged between 17 and 25 years,
(c) active users of social media within the past three months, and
(d) willing to participate by signing an informed consent form.

The exclusion criteria included students who were on academic leave or had already been employed as professional healthcare workers.

Data Analysis

Data analysis was conducted using SPSS version 26, following several stages outlined below, with the level of statistical significance set at $p < 0.05$.

a. Descriptive Analysis (Univariate)
This analysis aimed to describe the demographic characteristics of respondents and the distribution of each research variable. Categorical data (age group, gender, academic program) were presented in the form of frequencies and percentages. Numerical data (knowledge scores and interest scores) were summarized using measures of central tendency (mean, median) and measures of variability (standard deviation, range).

b. Inferential Analysis (Bivariate)
This analysis was conducted to examine the relationship between each independent variable and the respective dependent variables. The statistical tests employed included:
- Independent Samples t-test: Used to compare the mean scores of interest/behavior between two categorical groups.
- Analysis of Variance (ANOVA): Applied to compare mean scores of interest/behavior across more than two categorical groups.
- Pearson's Correlation (r): Utilized to measure the strength and direction of the relationship between two numerical variables (e.g., knowledge score and interest score).
- Chi-Square Test (χ^2): Conducted to test the association between two categorical variables (e.g., academic program and the most frequently used social media platform for accessing health information).

c. Analysis Limitation
This study did not proceed to multivariate analysis, as the primary objective was exploratory—aimed at identifying and mapping as many potential bivariate relationships as possible between various factors and levels of interest and behavior. Multivariate analysis, which is typically used to develop predictive models and control for confounding effects, is more appropriate for confirmatory studies. The significant findings from the bivariate analysis in this study will serve as a strong foundation for formulating specific hypotheses to be tested in future research using more complex study designs and larger sample sizes.

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Result

This section presents the findings derived from data analysis involving 150 respondents who fully participated in the study. The presentation of results is organized into two main subsections: univariate analysis, which describes respondent characteristics and the distribution of study variables, and bivariate analysis, which examines the relationships between variables.

Univariate Analysis

Univariate analysis was conducted to provide an overview of the respondents' demographic profile and the distribution of each key research variable.

1. Respondent Characteristics

Table 1 summarizes the demographic characteristics of the 150 respondents who participated in this study, including gender, age, academic semester, and study program.

Table 1. Descriptive Summary of Respondent Characteristics (n = 150)

Category	Frequency	Percentage (%)
Gender		
Female	113	75.3
Male	37	24.7
Total	150	100
Age (Years)		
Mean (SD)	20.8	
Min – Max	18 – 24	
Academic Semester		
III (Third)	45	30.0
V (Fifth)	60	40.0
VII (Seventh)	45	30.0
Total	150	100
Study Program		
Public Health	45	30.0
Nursing	38	40.0
Midwifery	30	20.0
Nutrition	22	14.7
Occupational Health & Safety (OHS)	15	10.0
Total	150	100

Based on Table 1, the majority of respondents in this study were female (75.3%), reflecting the general demographic trend within health-related academic programs. The mean age of respondents was 20.8 years, with a standard deviation of 1.5 years. In terms of academic semester, the highest participation came from fifth-semester students (40.0%), followed by third- and seventh-semester students, each representing 30.0% of the sample. Regarding the study program, the largest proportion of participants came from Public Health (30.0%) and Nursing (25.3%) students.

2. Distribution of Research Variables

Table 2 presents descriptive statistics for the main research variables, including knowledge, social media exposure, trust, interest, and behavior. Score-based variables were further categorized into three levels (Low, Moderate, High) to facilitate interpretation.

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Table 2. Univariate Distribution of Research Variables (n = 150)

Variable	Category	Value / Frequency (n)	Percentage (%)
Reproductive Health Knowledge	High (> 15)	76	50.7
	Moderate (10–15)	57	38.0
	Low (< 10)	17	11.3
Social Media Exposure	Very Frequent (> 3 hours/day)	63	42.0
	Frequent (1–3 hours/day)	65	43.3
	Rare (< 1 hour/day)	22	14.7
Trust in RH Information on Social Media	High (> 40)	16	10.7
	Moderate (25–40)	72	48.0
	Low (< 25)	62	41.3
Interest in Accessing Services via Social Media	High (> 40)	64	42.7
	Moderate (25–40)	73	48.7
	Low (< 25)	13	8.6
Service-Seeking Behavior	High / Active	28	18.7
	Moderate / Occasionally	94	62.6
	Low / Rarely	28	18.7

As shown in Table 2, more than half of the respondents (50.7%) demonstrated a high level of reproductive health knowledge, with an average score of 16.4 out of a maximum of 20. Regarding social media exposure for health-related information, the majority of respondents (43.3%) were classified as frequently exposed. An interesting finding emerged in the variable of trust. Despite frequent exposure, most students reported moderate (48.0%) to low (41.3%) levels of trust in reproductive health information found on social media, with only 10.7% exhibiting a high level of trust.

In the dependent variables, the interest in accessing reproductive health services (RHS) via social media was predominantly distributed in the moderate (48.7%) and high (42.7%) categories. However, this distribution did not fully align with the actual behavior. Regarding service-seeking behavior, the majority of respondents (62.6%) reported accessing services only occasionally (moderate category), while only 18.7% were classified as active users. This indicates a notable gap between relatively high levels of interest and more moderate levels of actual engagement.

Bivariate Analysis

At this stage, the analysis focused on testing the statistical associations between each independent variable and the two dependent variables (interest and behavior). A significance level of $p < 0.05$ was applied for all statistical tests. The complete results of the bivariate analysis are presented in Table 3 below:

Table 3. Bivariate Analysis of Factors Associated with Interest and Behavior in Accessing Adolescent Reproductive Health Services (n = 150)

Independent Variable	Dependent Variable	Statistical Test	Test Statistic	p-Value
Reproductive Health Knowledge	Interest	Pearson Correlation	r = 0.612	< 0.001
	Behavior	Pearson Correlation	r = 0.534	< 0.001
Trust in RH Information	Interest	Pearson Correlation	r = 0.489	< 0.001
	Behavior	Pearson Correlation	r = 0.451	< 0.001
Gender (Female vs. Male)	Interest	Uji t-Independen	t = 2.45	0.015
	Behavior	Uji t-Independen	t = 1.88	0.062
Study Program (Public Health, Nursing, etc.)	Interest	ANOVA	F = 3.15	0.016
	Behavior	ANOVA	F = 1.99	0.099
Frequency of Social Media Exposure	Behavior	Chi-Square (χ^2)	χ^2 = 9.87	0.043

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The table above reveals that knowledge of reproductive health (RH) and trust in information found on social media are both strongly and statistically significantly associated with students' interest and behavior in accessing RH services. Pearson correlation coefficients indicate that higher knowledge scores are positively correlated with both interest ($r = 0.612$) and behavior ($r = 0.534$), with both relationships reaching high statistical significance ($p < 0.001$). A similar pattern is observed for trust, with correlation coefficients of $r = 0.489$ for interest and $r = 0.451$ for behavior ($p < 0.001$), suggesting that trust plays a critical supportive role.

Demographic factors showed varying levels of influence. A statistically significant difference was observed in interest scores by gender ($p = 0.015$), where female students (Mean = 40.1, SD = 5.5) scored higher in interest compared to male students (Mean = 37.2, SD = 6.8). However, this gender-based difference was not significant in terms of behavior ($p = 0.062$). Furthermore, study program was found to be significantly associated with interest levels ($p = 0.016$). A post-hoc analysis (not shown in the table) revealed that students from Midwifery and Public Health programs had significantly higher interest scores than those from the Occupational Health and Safety program.

A more nuanced relationship was found between the frequency of social media exposure and service-seeking behavior. The Chi-square test revealed a significant association ($p = 0.043$) between exposure frequency categories and behavior levels (Low, Moderate, High). Further observation indicated that respondents classified in the 'High' behavior category were more commonly found among those with 'Frequent' exposure (1–3 hours/day), rather than those with 'Very Frequent' exposure (>3 hours/day). This suggests that excessive exposure does not necessarily lead to more proactive behavior—potentially due to the phenomenon of information fatigue.

Overall, the bivariate analysis identified knowledge, trust, gender, and study program as significant factors associated with students' interest in accessing reproductive health services. Meanwhile, knowledge, trust, and social media exposure patterns were significantly related to their actual behavior.

Discussion

This study aimed to analyze the factors influencing the interest and behavior of health students in Cirebon in accessing *Reproductive Health Services* (RHS) through social media. The main findings indicate that knowledge of RHS and trust in online information serve as strong foundational factors positively associated with both interest and behavior. In addition, demographic variables such as gender and academic program, along with patterns of social media exposure, contribute important nuances that enrich our understanding of this phenomenon. These findings are largely consistent with existing literature, while also offering several novel insights specific to the context of health students in Indonesia.

The finding that higher levels of knowledge are significantly correlated with greater interest and more active behavior aligns with existing literature on health literacy. Hee Y. Lee et al. (2021) also found that digital health literacy serves as a key enabler for adolescents in effectively seeking and utilizing health information (25). Health students, equipped with formal academic knowledge, are theoretically more capable of discerning credible sources of information. However, knowledge alone is insufficient. The strong association found with the variable of trust reinforces the notion that, in a "noisy" digital information ecosystem, trust in the source is a prerequisite for information to be internalized and acted upon (26). For health students, this may translate into a higher level of trust in social media accounts managed by official health organizations or verified professionals, as opposed to anonymous sources or general influencers.

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The significant difference in interest scores between female and male students aligns with the findings of Ulya Q. Karima (2023), who conducted a similar study in another Indonesian city. Her research linked this pattern to traditional gender roles and the biological relevance of reproductive health, which is often emphasized more strongly in relation to women (27). Furthermore, differences in interest across academic programs where students from Midwifery and Public Health exhibited higher levels of interest compared to those from Occupational Health and Safety (OHS) can be logically explained by curricular relevance. Reproductive health topics are central to the midwifery curriculum and constitute one of the main pillars of public health education, whereas the OHS curriculum is more narrowly focused on workplace safety. These findings suggest that academic exposure significantly shapes students' perceived relevance and personal interest in specific health topics.

One of the most intriguing findings of this study is the non-linear relationship between the frequency of social media exposure and service-seeking behavior. The fact that the most active engagement was observed among respondents with 'Frequent' (1–3 hours/day) rather than 'Very Frequent' (>3 hours/day) exposure suggests the possible presence of information overload and passive consumption. Shaohai Jiang (2022) highlighted that excessive exposure to health content on social media may lead to cognitive fatigue, ultimately reducing active engagement and fostering passive scrolling behavior (28). Students categorized as 'very frequent' users may be exposed to a high volume of reproductive health content, but often consume it passively without taking further action to engage with specific services.

The researchers also hypothesize that the noticeable gap between relatively high interest and more moderate behavior may reflect a classic "intention–behavior gap," a phenomenon well-documented in health psychology literature. Good intentions do not always translate into action due to the presence of various barriers. In the context of this study, such barriers may be external such as the lack of clarity or availability of RH services through social media platforms; or internal, including privacy concerns or the stigma associated with seeking RH information. This underscores the need for interventions that go beyond awareness-raising; effective strategies must also address practical and psychological barriers to help convert interest into tangible health-seeking behavior.

Conclusion

This study concludes that the interest and behavior of health students in Cirebon City regarding access to reproductive health services via social media are significantly driven by their levels of knowledge and trust in online information. High knowledge and strong trust serve as essential foundations for fostering active engagement. Furthermore, contextual factors such as gender and the curricular relevance of academic programs are also significantly associated with students' levels of interest. This research also highlights a significant gap between high interest and more moderate actual behavior , alongside a non-linear relationship between social media exposure frequency and behavior, suggesting a potential for information fatigue.

These findings have critical practical implications. For higher education institutions, there is a pressing need to integrate digital health literacy, ethics, and data privacy into health science curricula. For healthcare providers and program managers, digital interventions must move beyond mere information dissemination to strategically build trust for instance, by collaborating with verified professional accounts and address the practical and psychological barriers that impede the conversion of interest into tangible action.

Ultimately, to effectively leverage social media for adolescent reproductive health, it is insufficient to merely provide information. Efforts must be directed toward cultivating a digitally literate and critically-minded generation of future health professionals, who are capable not only of navigating the complex digital landscape for their own health but also of guiding their future patients through it.

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Conflict of interest
The authors declare that this research was conducted independently and is free from any individual or institutional conflict of interest.

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