

ORIGINAL RESEARCH ARTICLE

Exploring patterns and determinants of premarital sexual behaviour among Indonesian university students

DOI: 10.29063/ajrh2024/v28i6.8

Respati Wulandari^{1*}, Aprianti Aprianti¹, Ayu Ashari² and Dwi Eko Waluyo³

Department of Public Health, Faculty of Health Science, Universitas Dian Nuswantoro, Semarang Indonesia¹; Department of Medical Record and Health Information, Faculty of Health Science, Universitas Dian Nuswantoro, Semarang Indonesia²; Department of Management, Faculty of Economic and Business, Universitas Dian Nuswantoro, Semarang Indonesia³

*For Correspondence: Email: respati.wulandari@dsn.dinus.ac.id; Phone: +62 8179503121

Abstract

This study is aimed to explore the patterns and determinants of premarital sexual behaviour among Indonesian university students. The research was conducted by online survey, a cross-sectional approach (530 students). Research variables include knowledge, attitudes, practices, and demographic variables. Data were analyzed descriptively, using the Chi-Square test, Fisher Exact Test, and logistic regression to investigate the factors associated with premarital practices. The average age of respondents is 19 years old, with a small portion exposed to pornography. The primary source of pornography exposure is online, with the majority of respondents having good knowledge. Half of the respondents have a positive attitude towards reproductive health. A small portion of respondents have engaged in premarital sex, without using condoms, and have changed partners. In addition, exposure to pornography was significantly associated with premarital sexual practice ($p=0.000$). Collaboration among stakeholders (university, NGOs, lecturers, and students) is needed to enhance students' knowledge, attitudes, and behaviors regarding reproductive health to prevent premarital sexual practices among university students. (*Afr J Reprod Health 2024; 28 [6]: 75-84*).

Keywords: Reproductive health; health knowledge, attitudes, practice; sexual behaviour; students; Indonesia

Résumé

Cette étude vise à explorer les modèles et les déterminants du comportement sexuel avant le mariage chez les étudiants universitaires indonésiens. La recherche a été menée par enquête en ligne, une approche transversale (530 étudiants). Les variables de recherche comprennent les connaissances, les attitudes, les pratiques et les variables démographiques. Les données ont été analysées de manière descriptive, à l'aide du test du Chi carré, du test exact de Fisher et de la régression logistique pour étudier les facteurs associés aux pratiques pré-nuptiales. L'âge moyen des répondants est de 19 ans, avec une petite partie exposée à la pornographie. La principale source d'exposition à la pornographie est en ligne, la majorité des personnes interrogées en ayant de bonnes connaissances. La moitié des personnes interrogées ont une attitude positive envers la santé reproductive. Une petite partie des personnes interrogées ont eu des relations sexuelles avant le mariage, sans utiliser de préservatifs, et ont changé de partenaire. De plus, l'exposition à la pornographie était significativement associée à la pratique sexuelle avant le mariage ($p = 0,000$). La collaboration entre les parties prenantes (université, ONG, professeurs et étudiants) est nécessaire pour améliorer les connaissances, les attitudes et les comportements des étudiants en matière de santé reproductive afin de prévenir les pratiques sexuelles avant le mariage parmi les étudiants universitaires. (*Afr J Reprod Health 2024; 28 [6]: 75-84*).

Mots-clés: Santé reproductive; connaissances, attitudes et pratiques en matière de santé ; comportement sexuel ; étudiants; Indonésie

Introduction

Premarital sex refers to the act of engaging in vaginal penetrative sexual intercourse between individuals who have not undergone the official process of marriage¹. The results of the 2020 population census in Indonesia indicated a total population of 270.203.917 people, with 17% of them being adolescents aged 15-24. This is

equivalent to 46.074.510 individuals, comprising 23.690.087 males and 22.384.423 females². The age group of 15-24 years represents the period of education for students at the Senior High School and College levels. The Republic of Indonesia Law Number 16 in 2019, which regulates marriage, stipulates that the minimum age for marriage for both males and females is 19 years. This age limit is set to prevent the negative consequences of early

marriage. However, there is still 8.06% proportion of interviewed females aged 20-24 who are married or living together before reaching the age of 18.

Premarital sexual action in adolescents is influenced by a combination of internal and external variables³. Hormones have a crucial role in the regulation of the transition from childhood to adolescence. This phenomenon is seen in the accelerated growth and maturation of several body systems, including physical, mental, social, emotional, and sexual organs⁴. Adolescents who are unprepared to cope with major changes have gotten higher level of stress, which can lead to both physical and emotional repercussions⁵. The absence of knowledge pertaining to reproductive health will have a significant impact on the well-being and development of teenagers. The presence of permissive parenting practices as external influences has been observed to negatively impact teenagers' self-regulation abilities. The behavioral patterns of adolescents might be influenced by the evolving cultural standards resulting from temporal progress.

Adolescence is a time that is vulnerable to risky behaviors, including the practice of premarital-free sex¹. The development of reproductive organs in adolescence has not developed perfectly. Premarital sex practices carried out on adolescents have a chance of injury. In addition, the negative impacts caused are unexpected teenage pregnancy, abortion, Human Immuno-deficiency Virus (HIV) and Acquired immune-deficiency Syndrome (AIDS), Sexually Transmitted Infections (STIs), emotional and mental disorders including guilt, depression, regret, loss of self-esteem, impact on social consequences. Those social consequences are loss of family support and even suicide^{6,7}. The impact of premarital sex is adolescent pregnancy which increases the chances of death in adolescent girls. The highest risk of maternal death occurs in adolescent girls under 15 years old. Pregnancy and childbirth complications are higher in adolescent girls aged 10-19 years (compared to women aged 20-24 years)⁸. The practice of premarital sex is influenced by many factors, including sociodemographics such as age^{6,9}, gender^{6,9-11}, and academic achievement⁹. Other factors are exposure to pornography^{9,12-14}, drug use¹³, allowance^{14,13}, lack of discussion with family¹³, having a

girlfriend¹⁰, peer pressure¹¹, knowledge and attitudes about reproductive health¹⁵.

Religion is widely acknowledged as being of paramount importance and is commonly seen as a significant protective factor¹⁶. Indonesia is a country with a Muslim population reaching 237.55 million people (as of 2022). This figure makes it the nation with the largest Muslim population in both the Association of Southeast Asian Nations (ASEAN) region and globally. This number is equivalent to 86.7% of the total population in Indonesia, indicating that the majority of the population is Muslim. Indonesia is not a country that applies Islamic Sharia law. Instead, Indonesia adopts the principle of *Bhineka Tunggal Ika*, which means that the society respects the cultural, traditional, normative, and religious differences in Indonesia. The people of Indonesia highly value their cultural traditions and norms, incorporating them into their daily live. Numerous prior investigations have yielded findings indicating that students enrolled in science study programs exhibit commendable levels of knowledge and positive attitudes pertaining to reproductive health^{17,18}. The correlation between social media exposure and sexual awareness, pregnancy, contraceptive techniques, and HIV/AIDS has been observed¹⁹.

Education on reproductive health is incorporated into the curriculum of elementary, junior high, and high schools in Indonesia. Nevertheless, according to the Indonesian Demographic Survey (IDHS) conducted in 2017, around 80% of adolescents initiate romantic relationships between the ages of 15 and 17. The activity commonly happened while dating is hand-holding, with approximately 75% of men and 64% of women participating. Hugging is also prevalent, with around 33% of men and 17% of women engaging in this activity. Kissing on the lips is another common practice, with approximately 50% of men and 30% of women partaking in this activity. Lastly, touching or physical contact is observed, but to a lesser extent, with approximately 22% of men and 5% of women engaging in such behavior. The prevalence of first-time sexual experiences is higher among males (74%) compared to women (59%). However, on average, teenagers engage in their first sexual encounter by reaching a certain age²⁰. According to the findings of the 2012 Indonesian Demographic Survey, it

was observed that a higher proportion of males aged 15-19, specifically, 4.5% or 6835 individuals engage in premarital sexual activity compared to females, where the corresponding figure was 0.7% or 6018 individuals. Similarly, within the older age (20-24 years), the prevalence of premarital sexual misconduct among males was seen to be 14.6% higher, with a total of 4145 individuals, compared to females, who accounted for 1.8% (2401 individuals)²¹. The prevalence of premarital sexual activity among women aged 15-24 years has exhibited a notable rise, escalating from 1% in 2012 to 2% in 2017. Nevertheless, the prevalence of this phenomenon exhibits a greater incidence among males, namely at a rate of 8% throughout the years 2012 and 2017. In Indonesia, it is observed that the proportion of individuals categorized as the adolescent age group (10-24 years old) in the year 2022 approximates 25% of the overall population, which stands at 275.774 individuals²². This demonstrates that teenagers play a pivotal role in future development, although they face potential risks associated with engaging in premarital sexual activity. Hence, the primary objective of this study is to investigate the prevalence of premarital sexual activity and the factors influencing such behavior among Indonesian students.

Methods

The study and population design

The research was carried by using a cross-sectional online survey from October 2022 to February 2023. The population for this study consisted of all currently enrolled students in universities in Indonesia. The study's inclusion criteria encompass students who enrolled in stratum one and diploma programs who express their willingness to participate in completing questionnaires.

Sample size and sampling procedure

According to the calculations conducted by Lamessow, a minimum sample size of 384 was determined for an unidentified population, with a standard error of 5%. A total of 559 questionnaires were completed by the respondents. Twenty-nine respondents were found to be unregistered in undergraduate or diploma programs, resulting in a

total of 530 qualified responders. The sample size of 530 respondents is considered enough for representing the respondents in this study.

Instrument and variables

The research instrument employed in this study is a structured questionnaire, which is based on the research conducted by Win *et al*¹⁷. The development of the questionnaire was based on the requirements of the research. The survey was administered through a Google form and distributed over the messaging application WhatsApp.

The variables encompassed in this study consist of socio-demographic data, including factors such as educational attainment, religious affiliation, age, faculty affiliation, geographical location of the college, gender, drug usage, frequency of online activities, and exposure to pornography, as well as sources of pornographic information. This study examines the variables pertaining to knowledge and attitudes around reproductive health, encompassing topics such as the fertile period and reproductive health, pregnancy, the minimum age for marriage, the minimum and maximum age for childbearing, family planning, early marriage, sexually transmitted illnesses, and HIV/AIDS. The number of knowledge questions in the assessment was 24, and each question was accompanied with answer choices in the form of true or false. The 14-point attitude question employs a Likert scale consisting of five response options, namely "strongly disagree," "disagree," "neutral," "agree," and "strongly agree." The sexual experience practice questionnaire has a set of five questions, each accompanied by answer choices in the form of "yes" or "no."

Data analysis

Descriptive data analysis was performed on the variables pertaining to socio-demographic characteristics. The chi-square test is utilized to examine the relationship between the practice of sexual experiences and other risk factors. Whitney Mann test is employed in cases where the assumption of Chi-Square test are not satisfied. Logistic regression analyses are performed to assess the significance of risk factors exhibiting a

p-value below 0.05. In the present investigation, factors exhibiting a p-value less than 0.05 were deemed to possess statistical significance.

Ethical considerations

The research was conducted following Helsinki's declaration and received approval from the ethical permission from Ethics Committee of Universitas Dian Nuswantoro, Semarang, Indonesia (No: 309/EA/KEPK-Fkes-UDINUS/IX/2022).

Results

A total of 559 individuals completed the research questionnaire. Out of the total number of participants, 29 individuals were excluded as they did not meet the predetermined inclusion criteria. Consequently, the final eligible sample consisted of 530 responses. Table 1 presents the distribution of characteristics among the sample of 530 respondents. Table 1 indicates that the average age of the respondents is 19.4 (± 1.37), with the

majority currently pursuing a bachelor's degree (93%). They primarily studied in universities located on Java Island (80.6%) and enrolled in health-related study programs (65.8%). Most respondents were identified as Muslim (88.5%) and they are female (77.9%).

Table 2 describes the reproductive health-related behaviors of the respondents. Nearly all respondents do not use drugs (98.9%) and 18.1% respondents have read or watched pornography, with nearly all of these activities conducted online (97.9%). Most respondents engage in online activities such as reading, shopping, working, and more for over 4 hours daily (78.5%). The respondents who have good knowledge shows significant portion (71.7%), and more than half (51.9%) have a positive attitude toward reproductive health. Out of the total 530 respondents, 22 individuals have engaged in premarital sexual relations (4.2%). The majority of them (77.3%) had premarital sexual relationships without changing partners and the use of condoms

Table 1: Characteristic of students

Variables	Mean (Std. dev)	Median	Min-max
Age (year)	19.4 (± 1.37)	19	17-25
Variables		n	%
Age (year)			
	<19	136	25.7
	≥ 19	394	74.3
Total		530	100.0
Current Educational			
	Diploma	37	7.0
	Bachelor	493	93
Total		530	100.0
Religion			
	Non-muslim	61	11.5
	Muslim	469	88.5
Total		530	100.0
College Location			
	Outside Java	103	19.4
	Java	427	80.6
Total		530	100.0
Gender			
	Male	117	22.1
	Female	413	77.9
Total		530	100.0
Faculty			
	Non-public Health	181	34.2
	Public Health	349	65.8
Total		530	100.0

Table 2: Pre-marital sexual behavior of students

Variables	n	%
Drug Use		
No	524	98.9
Yes	6	1.1
Total	530	100.0
Exposure to Pornography		
Not Exposed	434	81.9
Exposed	96	18.1
Total	530	100.0
Source of exposure to pornography		
Online	94	97.9
Offline	2	2.1
Total	96	100.0
Online Activities/Day		
< 4 (hours)	114	21.5
> 4 (hours)	416	78.5
Total	530	100.0
Knowledge of reproductive health		
Low	150	28.3
High	380	71.7
Total	530	100.0
Attitudes of Reproductive Health		
Poor	255	48.1
Good	275	51.9
Total	530	100.0
Primarital sex practice		
No	508	95.8
Yes	22	4.2
Total	530	100.0
Multiple sexual partners		
No	17	77.3
Yes	5	22.7
Total	22	100.0
Using condoms		
No	8	36.4
Yes	14	63.6
Total	22	100.0
Pregnant or impregnated		
No	22	100.0
Yes	0	0.0
Total	22	100.0

(63.6%). All respondents stated that they have never been pregnant or impregnated anyone (100%).

Table 3 shows the determinants of premarital sex practices among adolescents in Indonesia. There were five significant factors (<0.05), such as older age (≥ 19), male, non-public health faculty, exposure to pornography, dan poor attitude towards reproductive health.

Table 4 shows the logistic regression results of pornography exposure associated with

premarital sexual practices (AOR=19.61; 95% CI (6,282-61,227); $p=0.000$) after adjusting for age, sex, faculty, exposure to pornography and attitude variables.

Discussion

This study investigates the patterns and determinants of premarital sex practices among Indonesian university students. The research findings indicate the average age of 19.4 (± 1.37), with the age range being 17 to 25 years. Premarital sex doers in this study were found among all students aged over 19 years. The number of students who have engaged in premarital sex is 22 individuals (4.2%) out of 530 respondents. This finding is relatively lower compared to studies among students in China (18.1%)²³ and significantly lower than in Nigeria (45.8%)²⁴, Tanzania (70.4%)²⁵, and Uganda (74%)²⁶. This discrepancy may be attributed to the fact that the majority of Indonesia's population is Muslim, and most respondents were identified as Muslim (88.5%). In Islamic law, social interactions in daily life must align with the teachings of Islam, adhering to Islamic values without violating norms and ethics. Islamic law prohibits promiscuity, defined as interactions that deviate from religious rules, norms, and ethics, including engaging in premarital sex. The culture, traditions, and societal norms may also contribute to the lower prevalence of premarital sex practices among Indonesian students. The majority of society still adheres to and complies with cultural values, traditions, and societal norms. Purity, dignity, self-respect, and honor are strongly held, as they reflect an individual's morality. The perfection of faith is reflected in noble conduct. The study results show that despite engaging in premarital sex, respondents make efforts to practice safer sex by not changing partners and using condom during sexual encounters. Out of the 22 students who have engaged in premarital sex, the majority (16 individuals or 72.7%) did not have multiple partners, and 14 individuals (63%) were using condom.

In this study, most students (63.6%) who have engaged in premarital sexual intercourse (22 students) possess a high level of knowledge about reproductive health. However, nearly 75% exhibit negative attitudes.

Table 3: Relationship between determinant factors and premarital sex practices among students

Determinants of Premarital Sex Practices	Premarital Sex Practices				p- Value	PR	95% CI	
	No (n=508) (95.8%)		Yes (n=22) (4.2%)				Lower	Upper
	n	%	n	%				
Current educational								
Diploma	36	6.8	1	0.2	1.000	1.60	0.209	12.251
Bachelor	472	89.1	21	4.0				
Religion								
Non-muslim	58	10.9	3	0.6	0.731	1.23	0.352	4.267
Muslim	450	84.9	19	3.6				
Age								
<19 (year)	136	25.7	0	0.0	0.010*	1.06	1.034	1.085
>=19 (year)	372	70.2	22	4.2				
College Location								
Outside Java	100	18.9	3	0.6	0.593	1.55	0.450	5.349
Java	408	77.0	19	3.6				
Gender								
Male	107	20.2	10	1.9	0.015*	3.12	1.314	7.424
Female	401	75.7	12	2.3				
Faculty								
Non-public Health	165	31.1	16	3.0	0.000*	0.18	0.069	0.469
Public Health	343	64.7	6	1.1				
Drug Use								
No	503	94.9	21	4.0	0.226	4.79	0.536	42.845
Yes	5	0.9	1	0.2				
Exposure Pornography								
Not Exposed	429	80.9	5	0.9	0.000**	18.46	6.621	51.489
Exposed	79	14.9	17	3.2				
Source of exposure to pornography								
Online	77	97.5	17	100	1.000	0.98	0.941	1.010
Offline	2	2.5	0	0.0				
Online Activities/Day								
< 4 (hours)	112	21.1	2	0.4	0.190	2.83	0.651	12.284

Wulandari et al.

Premarital sexual behaviour: pattern and determinants

> 4 (hours)	396	74.7	20	3.8				
Knowledge of reproductive health								
Low	142	26.8	8	36.4	0.538	0.68	0.279	1.653
High	366	69.1	14	63.6				
Attitudes about Reproductive Health								
Poor	239	45.1	16	72.7	0.032*	0.33	0.128	0.865
Good	269	50.8	6	27.3				

* P<0.005; ** P<0.001; PR = Prevalence Ratio; CI = Confidence Interval

Table 4: Impact of determinants on premarital sexual practices among students

Determinants	B	AOR (95% CI)	p-Value
Faculty	1.571	0.21 (0.000 -)	0.004*
Pornography Exposure	2.976	19.61 (6.282-61.227)	0.000**

**P<0.001; AOR = Adjusted Odds Ratio; CI = Confidence Interval

Knowledge represents an individual's cognitive domain for taking action. In this case, logically, individuals with good knowledge of reproductive health should be aware of the negative impacts associated with premarital sex. However, due to their negative attitudes, premarital sex may occur when they experience pleasure in sexual relationships and perceive having a sexual partner as a normal and modernized behavior²⁷. This aligns with the view expressed by Albarracin that the social context is one of the factors influencing an individual's attitudes²⁸.

All respondents who engaged in premarital sex were at least 19 years old. This finding aligns with the research reports on students at Debre Berhan University (18.7 years)⁹, Bahir Dar University (18.6 years)²⁹, and Wokite University (20.73 years)³⁰. This can be justified because this age limit falls within the late adolescent stage. It is when an increase in age is associated with the increased sexual experience and improved communication skills to fulfill sexual desires. It is consistent with the findings of the Indonesian Demographic and Health Survey (SDKI) that adolescents aged 20-24 are more likely to approve of premarital sexual behavior compared to those aged 15-19²⁰.

Women (2.3%) engage in sexual practices more than men (1.9%). This result contrasts other studies where men are more likely than women to engage in sexual practices^{9,13}. This is possible because of modern lifestyles, such as the findings of students at a private university in Mekelle, Ethiopia, who consider having a sexual partner to be commonplace in what is considered a sign of modernization²⁷. Another thing that is considered possible is the ratio of the number of male respondents (107 people) and female (401 people).

Premarital sex practices are predominantly conducted by students enrolled in faculties other than health faculty. This condition closely aligns with the findings of research conducted in Malaysia, Bangladesh, and Indonesia, which similarly reported that science students possess a greater understanding of reproductive health in

comparison to their non-science counterparts^{17,27}. The students of health faculty are from science majors. They attend biology classes in high school and pursue health-related coursework in college. Non-health faculty students, meanwhile, are not granted this opportunity. Therefore, it is logical that health faculty students have superior reproductive health knowledge and attitudes compared to non-health students.

Exposure to pornography was the most determining factor in premarital sex practices in this study ($p = 0.000$). Students who had read/viewed pornography were 19.61 times more likely (95% CI: 6,282-61,227) to practice premarital sex. This figure is relatively high compared to several studies conducted in Ethiopia by Akibu, Damtie (OR= 3.41; 95% CI: 1.99-5.84), Taye (AOR= 3.2; 95% CI: 1.8-5.7), and Addila (AOR=3.5, 95% CI: 1.72- 7.15)^{9,12,14,31}. In this study, 77.3% of all at-risk sexual doers had been exposed to pornography previously, primarily through online media (100%). These findings align with research by Wana, reporting that students use social media (Facebook, YouTube, and Instagram) to watch pornography before engaging in sexual activities³². Messages, photos, and videos on social media (Facebook) can stimulate sexual desires and have a higher potential for engaging in sexual relationships with strangers^{33,34}. Watching pornography is a key activity before engaging in sexual relationships. The stimulation has the power to enhance sexual desire and pleasure during sexual activities. Pornography influences thoughts and norms, leading individuals into risky sexual practices.

Limitations

This present research is sensitive. The veracity of the responses may introduce a potential source of bias that should not be disregarded. Furthermore, the research employed quantitative data, which limited its ability to delve further into sexual behavior and thereby precluded its inclusion in the report.

Conclusion

Exposure to pornography from online media is identified as a significant primary factor influencing premarital sex practices among university students in Indonesia. The low number of students engaging in premarital sex is associated with religious factors, strong norms, and cultural guidance in their lives. Despite engaging in premarital sex, many students exhibit high levels of knowledge and positive attitudes toward reproductive health, as evidenced by their efforts to practice safer behavior by using contraception and avoiding multiple partners. This study found only a small number of students involved in premarital sex. However, preventive efforts, especially targeting adolescents, are still necessary. Additionally, further in-depth studies on online media's role in adolescent sexuality are required.

Authors' contributions

All authors participated in the study. WR played a role in designing the design and participates in all stages from start to finish. First, WDE and AA collected, analyzed and interpreted data. Next, WR, AA and AA compiled and reviewed the manuscripts. Finally, all authors revised and approved the final manuscript.

Conflict of interest

The authors declare that they have no conflict of interest.

Funding

This research was funded by Universitas Dian Nuswantoro (Number: 081/A38-04/UDN-09/X/2022).

Data availability

The data for this research is available and can be requested through the corresponding author upon reasonable request.

Acknowledgments

The researcher expressed his gratitude to Universitas Dian Nuswantoro, Semarang, Indonesia, for moral and material support. Thank you to all parties involved in this research, with a

Premarital sexual behaviour: pattern and determinants

special acknowledgment to Mr. Muhammad Siddique Afridi for his invaluable contribution in conducting the internal review of this manuscript.

References

1. Mengistie Z, Wolie E, Abawa E and Ebre E. Knowledge Attitude and Practice Towards Premarital Sex and HIV/AIDS among Mizan-Tepi University Students, South West Ethiopia. *Sci J Public Heal.* 2015;3(4):592.
2. Badan Pusat Statistik. Portrait of the 2000 Population Census Toward Unified Population Data of Indonesia. Vol. 1. Jakarta; 2021.
3. Rahman RTA and Yuandar E. Premarital Sexual In Adolescents At Senior High School PGRI 4 Banjarmasin. *Proc First Natl Semin Univ Sari Mulia, NS-UIMSM 2019, 23rd Novemb 2019.* 2020;7.
4. UNICEF. Adolescent Development and Participation [Internet]. 2023 [cited 2023 Mar 21]. Available from: <https://www.unicef.org/adolescence>
5. Kar S, Choudhury A and Singh A. Understanding normal development of adolescent sexuality: A bumpy ride. *J Hum Reprod Sci.* 2015;8(2):70–4.
6. Ministry of Health (Kemenkes). Demographic health survei: 2017 Adolescent Reproductive health, Indonesia. Jakarta: Statistic Indonesia; 2018.
7. Shrestha RB. Premarital Sexual Behaviour and its Impact on Health among Adolescents. *J Heal Promot.* 2019;7(June):43–52.
8. World Health Organization. Maternal Mortality [Internet]. 2023 [cited 2023 Mar 25]. Available from: <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>
9. Akibu M, Gebreselliasie F, Zekarias F and Tsegaye WW. Premarital sexual practice and its predictors among university students: Institution based cross sectional study. *Pan Afr Med J.* 2017;28:1–11.
10. Netsanet H, Ayanalem A, Tizita G, Shimeles A, Yemane T and Terefe G. Prevalence of premarital sexual practices and its associated factors among high school students in Addis Zemen Town, South Gondar, Ethiopia, 2017. *J Public Heal Epidemiol.* 2018;10(10):356–62.
11. Behulu GK, Anteneh KT and Aynalem GL. Premarital sexual intercourse and associated factors among adolescent students in Debre-Markos town secondary and preparatory schools, north west Ethiopia, 2017. *BMC Res Notes.* 2019;12(1):4–9.
12. Damtie Y, Cherie N, Fentaw H, Kefale B, Addisu E, Yalew M, Arefaynie M, Adane M, Adane B, Kassa AA, Abebayehu A and Ayele FY. Pre-marital sex and its association with peer pressure and watching pornography among young individuals in Ethiopia: a systematic review and meta-analysis. *Sci Rep.* 2022;12(1):9572.
13. Sorato MM and Belijo ZN. Magnitude and Predictors of Premarital Sexual Practice among Unmarried Undergraduate Students, at Arba Minch University, Ethiopia, 2015. *Int J Reprod Fertil Sex Heal.* 2017;(April):95–104.

14. Taye B and Nurie T. Assessment of premarital sexual practices and associated factors among private college regular students in Bahir dar city, northwest Ethiopia: a cross-sectional study. *Int J Hort Agric Food Sci.* 2017;1(1):60–7.
15. Pidah AS, Kalsum U, Sitanggang HD and Guspianto. Determinants of Premarital Sexual Behavior Among Adolescents (Aged 15-24 Years) in Indonesia (Analysis of the 2017 IDHS). *J Kesmas Jambi.* 2021;5(2):9–27.
16. Perera UAP. Prevalence and associated factors of risky sexual behaviors among undergraduate students in state universities of Western Province in Sri Lanka: a descriptive cross sectional study. *Reprod Heal.* 2018;15(105).
17. Win S, Lasimbang HB, Win MMC, Parash MTH, Aung MNL, Tat SB and Than YM. Knowledge, attitude and practice towards sexual and reproductive health including comprehensive sexuality education among first year students of university Malaysia Sabah (UMS), Malaysia. *Malaysian J Public Heal Med.* 2020;20(1):184–91.
18. Zakaria M, Karim F, Mazumder S, Cheng F and Xu J. Knowledge on, attitude towards, and practice of sexual and reproductive health among older adolescent girls in Bangladesh: An institution-based cross-sectional study. *Int J Environ Res Public Health.* 2020;17(21):1–14.
19. Saha R, Paul P, Yaya S and Banke-Thomas A. Association between exposure to social media and knowledge of sexual and reproductive health among adolescent girls: evidence from the UDAYA survey in Bihar and Uttar Pradesh, India. *Reprod Health.* 2022;19(1):1–15.
20. Central Statistics Agency, National Population and Family Planning Agency. Indonesia Demographic and Health Survey 2017 YOUTH BOOK. 2018.
21. Central Statistics Agency, National Population and Family Planning Agency. Indonesia Demographic and Health Survey 2012: Adolescent Reproductive Health [Internet]. National Population and Family Planning Agency.2012. Available from: <http://www.dhsprogram.com>.
22. Central Statistics Agency. Population by Age Group and Gender, 2022 [Internet]. 2023. Available from: https://www.bps.go.id/indikator/indikator/view_data_pub/0000/api_pub/YW40a21pdTU1cnJxOGt6dm43ZEdoZz09/da_03/1
23. Cao Y, Xiao H, Yan H, Li J and Li S. Prevalence and sex-related risk factors of premarital pregnancy and reproductive tract infections among female undergraduates in Wuhan, China. *Asia-Pacific J Public Heal.* 2015;27:30S-40S.
24. Oleribe OO, Okojie OH, Burstow NJ and Taylor-Robinson SD. Premarital sex and condom use among trainee healthcare workers: An exploratory study of selected healthcare training institutions in Enugu state, Nigeria. *Pan Afr Med J.* 2019;32:1–12.
25. Somba MJ, Mbonile M, Obure J and Mohande MJ. Sexual behaviour, contraceptive knowledge and use among female undergraduates' students of Muhimbili and Dar es Salaam Universities, Tanzania: A cross-sectional study. *BMC Womens Health.* 2014;14(1):1–8.
26. Musiime KE and Mugisha JF. Factors Associated with Sexual Behaviour among Students of Uganda Martyrs University. *Int J Public Heal Res.* 2015;3(1):85–93.
27. Gebresllasie F, Tsadik M and Berhane E. Potential predictors of risk sexual behavior among private college students in Mekelle City, North Ethiopia. *Pan Afr Med J.* 2017;28:1–11.
28. Albarracín D and Shavitt S. Attitudes and Attitude Change. *Annu Rev Psychol.* 2018;69(August 2017):299–327.
29. Mulu W, Yimer M and Abera B. Sexual behaviours and associated factors among students at Bahir Dar University: A cross sectional study. *Reprod Health.* 2014;11(1):1–12.
30. Mengistu T, Terefe GB, Gudeta AG, Mengistu TK, Mekonnen GB and Belay. Premarital sexual practice and associated factors among social science stream university students in Ethiopia. *Int J Africa Nurs Sci.* 2022;17(January):100452.
31. Addila EA, Abebe ND, Abebe W and Turuse EA. Premarital Sexual Practice and Its Predictors Among Preparatory School Students Living with and Without Parents in Hossana Town, Southern Ethiopia. *Sci J Public Heal.* 2020;8(3):63.
32. Wana GW, Arulogun O, Roberts A and Kebede AS. Predictors of risky sexual behaviour among pre-college students in Adama town, Ethiopia. *Pan Afr Med J.* 2019;33:1–12.
33. Nagaddya R, Kiconco S, Komuhangi A, Akugizibwe P and Atuhairwe C. Assessing the Influence of Social Networking Material on Adolescents' Sexual Behavior in Kampala. *J Educ Pract.* 2017;8(15):187–93.
34. Young SD and Jordan AH. The influence of social networking photos on social norms and sexual health behaviors. *Cyberpsychology, Behav Soc Netw.* 2013;16(4):243–7.