

Spatial Pattern Analysis of Dating Status as a Risk Factor on Adolescent Sexual Activity in Surabaya, Indonesia

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Abstract

Background: Many adolescents misinterpret the definition of sexual activity, which is only generalized as having sex. In fact, many other activities can trigger the emergence of sexually transmitted infections. Therefore, this study aimed to analyze various factors that influence the occurrence of sexual activity in adolescents.

Methods: This study used a cross-sectional analytical design with non-probability sampling involving active college students aged 18–24 years from Surabaya, Indonesia. Data was collected using a questionnaire about their experiences of sexual activity at a young age. The questionnaire was distributed online in July–August 2023. The data obtained was analyzed using the chi-square test and simple logistic regression. Then, Q-GIS software was used to describe data spatially.

Results: Of the 152 respondents, the majority were female (84.2%), aged 20–24 years (76.3%), living with parents (53%), and were in a dating status (80.3%). Dating status had an association with the occurrence of sexual activity ($p\text{-value}=0.000$). Spatial data showed that the sexual activity of students in the eastern region of Surabaya City had a relatively high rate compared to the other regions.

Conclusion: Dating status is associated with sexual activity. Students who have ever dated and who have had sexual relations are directly proportional in each region in Surabaya. Awareness and education of adolescents about healthy sexual activities should be increased to protect them from the negative impacts of premarital sex.

Keywords: Adolescent, dating status, premarital sex, sexually transmitted diseases, sexual activity

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Introduction

Adolescence is the period between childhood and adulthood, which begins at the ages of 10 to 19 years. This period is a crucial time to lay the foundations of good health.¹ Furthermore, the adolescent period was expanded to 10–24 years and divided into 3 phases, namely early adolescence (10–14 years), late adolescence (15–19 years), and post-adolescence (20–24 years) which are considered more

appropriate to adolescent growth and general understanding of this phase of life.^{2,3}

One of the characteristics of adolescent development is having a high sense of curiosity, which makes adolescents want to try everything that they have never experienced. During adolescence, sexual hormones have begun to become active, causing interest in the opposite sex and the emergence of sexual urges.⁴ Sexual activity is considered taboo by today's teenagers. Many adolescents misinterpret

sexual activity by simply generalizing it as having sex. Sexual behavior is any behavior driven by a sexual desire, whether alone, with the opposite sex, or with the same sex. Sexual behavior can also be manifested by sexual abstinence, sexual fantasies, flirting, touching, hugging, and kissing to behavior that can pose high risks, such as oral sex, anal sex, vaginal sex, and even sexual intercourse.

The main risks of having sex are contracting sexually transmitted infections (STIs) and unwanted pregnancies. The STI is a problem that needs sufficient attention as it may affect later in the productive age.⁵ In the United States in 2018 it was estimated that adolescents aged 15–24 years accounted for nearly half of the 26 million cases of new sexually transmitted infections.⁶ A survey conducted among unmarried adolescents aged 15–24 years in North Sulawesi, Indonesia has resulted that 95% of those in a relationship had held hands, whereas 63% had claimed to have kissed on the lips.⁷

Students transitioning from adolescence to early adulthood certainly have diversity in responding to sexual activities. In the globalization era, getting any information through social media is undoubtedly effortless. Unrestricted use of social media will have a negative impact because adolescents will find it challenging to filter incoming information, including information related to sexual behavior, and impact their curiosity to try new things.⁸ Research shows that adolescents using social media tend to engage in risky sexual activities.⁹

Currently, Indonesia's population is dominated by generation Z. East Java accounts for the second largest Gen Z population in Indonesia.¹⁰ As the second largest metropolitan city as well as the largest city in East Java, Surabaya ranked first as the region with the most HIV cases in East Java in 2019, based on the age group 10–19 years with a proportion of 1.3%, whereas in the age group >19 years with a proportion of 43.7%.¹¹ Therefore, this study aimed to analyze various factors that influence the occurrence of sexual activity in adolescents, especially among college students in Surabaya. This study is expected to reduce maternal and infant mortality rates due to the impacts caused by adolescents engaging in risky sexual activities.

Methods

This study used a cross-sectional analytical design by taking exposure and outcome

data simultaneously. The sample size was determined through Slovin's calculation with a 90% confidence level, with a minimum sample size of 100 respondents. The samples selected by non-probability sampling in the study were categorized based on education criteria (active student), age (18–24 years old), and location (studying at a university in Surabaya City). Surabaya, the capital city of East Java province, had 31 sub-districts and 154 villages. The northern and eastern area of Surabaya City were bordered by the Madura Strait, the southern was bordered by Sidoarjo Regency, and the Western was bordered by Gresik Regency.¹²

This study collected data on sexual activity experiences of respondents while maintaining the confidentiality and privacy of respondents. Informed consent was distributed. Ethical approval was obtained from the Ethical Clearance Commission of the Faculty of Public Health, Airlangga University no. 143/EA/KEPK/2023.

Data collection was conducted from July to August 2023 by distributing a Google form questionnaire through social media. The contents of the questionnaire included sociodemographic characteristics, such as age, gender, place of residence, and parental income as independent variables. In addition, other independent variables were also included, such as the use of social media, which was categorized into two criteria, namely positive and negative criteria, which were measured based on duration, frequency, and type of use (Table 1). The positive criteria were the utilization of social media by respondents under 4 hours, the frequency of using social media with the categories very often, often and sometimes, and interests other than finding out about pornographic things. The negative criteria were the utilization of social media by respondents over 4 hours, the frequency of social media use with categories rarely and very rarely, and the importance of finding out about pornographic things.

Relationship status was categorized based on dating relationship. In addition, questions regarding sexual consent, experience of sexually transmitted infection symptoms were included. Measurement of the consent for sexual acts was carried out using a Likert scale with numbers 1–5 describing strongly agree-strongly disagree. Sexual behavior with consent if the total score was 10–45 and the criteria without consent for a score of 46–50 (Table 2).

Furthermore, the level of sexual behavior

Table 1 Questionnaire on Symptoms of Sexually Transmitted Infections (STIs) and Social Media Usage

Questions	n (%)
Symptoms of sexually transmitted infections (STIs)*	
Vaginal discharge greenish yellow, smelly, itchy	16 (10.5)
No bleeding during the menstrual phase	11(7.2)
Pain in the vagina, lower abdomen during sexual intercourse	23 (15.1)
Small nodules on the genitals	13 (8.55)
Wounds/blisters on the genitals	19 (12.5)
Pain during urinating	19 (12.5)
Pus coming out from genitals when massaged	0 (0.0)
Swelling of the testicles and feeling painful/hot	0 (0.0)
Social Media	
Do you use social media?	
Yes	152 (100.0)
No	0 (0.0)
How long does it take to access social media?	
1–2 hours	17 (11.2)
3–4 hours	52 (34.2)
5–6 hours	57 (37.5)
≥7 hours	26 (17.1)
How often do you use social media?	
Never	0 (0.0)
Seldom	4 (2.6)
Sometimes	15 (9.9)
Often	88 (57.9)
Very often	45 (29.6)
What is the importance of using social media?**	
To communicate	141 (92.8)
Do online buying and selling	65 (42.7)
Searching for information	139 (91.4)
Looking for fun/passing time	145 (95.4)
Find out about pornographic things	10 (6.6)

Note: one respondent can choose more than one answer or even not choose all of them

was categorized into two, namely mild and extreme sexual activity. Mild sexual activity was characterized by holding hands, and extreme sexual activity was characterized by hugging, kissing the forehead and cheeks, kissing the lips, kissing the neck, groping breasts and genitals, rubbing the genitals, and sexual intercourse (Table 3).

The categorical data was then analyzed using SPSS software to be tested using the chi-square test, so that the relationship between the independent and dependent variables could be identified. The description of the distribution of university areas based on the category of sexual activity carried out by respondents was presented in the form of spatial data processed using Q-GIS (Quantum-GIS) software.

Results

Of the 152 respondents, the majority were female (84.2%), aged 20–24 years (76.3%), living with parents (53%) who had income <Rp. 6.000.000 (67.8%) (Table 4).

Most respondents (95.4 %) tended to have negative criteria in terms of social media use measured by duration, frequency, and type of content accessed.

As for relationship status, most respondents were in a dating status (80.3%), which was classified by the age of first sexual activity, mostly (83.6%) were in early adolescence (10–19 years old), with an extreme category of sexual activity (59.2%). However, the occurrence of sexually transmitted infection (STI) among respondents was low (36%),

Table 2 Questionnaire on Sexual Consent of Respondents

Statement	Strongly disagree n (%)	Disagree n (%)	Slightly disagree n (%)	Agree n (%)	Strongly agree n (%)
I will ask my partner for consent before engaging in sexual activity	2 (1.3)	1 (0.7)	5 (3.3)	31 (20.4)	113 (74.3)
I will stop and ask if everything is OK if my partner does not respond to my sexual advances	3 (1.9)	4 (2.6)	19 (12.5)	42 (27.6)	84 (55.3)
I will confirm verbally that my partner consents before engaging in sexual activity	4 (2.6)	0 (0.0)	8 (5.3)	45 (29.6)	95 (62.5)
I will not have sex when my partner and I are not fully aware (under the influence of drinking/drugs) to give consent	5 (3.3)	5 (3.3)	7 (4.6)	17 (11.2)	118 (77.6)
I would feel confident rejecting someone's sexual advances	1(0.6)	5(3.3)	8(5.2)	26(17.1)	112 (73.7)
I will refuse unwanted sexual intimacy with my date, even if it may ruin the romantic atmosphere	2 (1.3)	3 (1.9)	9 (5.9)	28 (18.4)	110 (72.4)
I will not be subject to verbal or physical pressure to refuse to have sex	3 (1.9)	8 (5.3)	13 (8.5)	38 (25.0)	90 (59.2)
I would rather not have sex than force myself on someone	1 (0.7)	0 (0.0)	3 (1.9)	18 (11.8)	130 (85.5)
I will respect my partner and stop sexual activity when asked to stop in the middle of sexual activity	1 (0.7)	2 (1.3)	10 (6.6)	33 (21.7)	106 (69.7)
I would always stop the first time my date said "no" to sexual activity	4 (2.6)	3 (1.9)	8 (5.3)	32 (21.1)	105 (69.1)

and they had a high awareness of questioning their partner's consent before engaging in sexual activity (sexual consent). There was an association between dating status and respondents' sexual activity (p-value = 0.000), indicating that respondents' dating status tended to continue with mild sexual activity (Table 4).

Based on the regional distribution, the number of respondents who were dating and

the number of respondents who engaged in sexual activity were directly proportional in each region. In the dark green area, East Surabaya had the highest cases of dating and engaging in sexual activity (Figure 1).

Discussion

Sexual behavior based on the environment among college students has a tendency to form

Table 3 Questionnaire on Sexual Activity of Respondents

Activity	Yes n(%)
Hold hands*	141 (92.8)
Hug**	90 (59.2)
Kiss the forehead and cheeks**	62 (40.8)
Kiss the lips**	27 (17.7)
Kiss the neck**	12 (7.9)
Feeling breasts and genitals**	9 (5.9)
Rubbing the genitals**	8 (5.2)
Sexual intercourse**	5 (3.3)

Note: *mild sexual activity (hold hands), **extreme sexual activity (hug, kiss the forehead and cheeks, kiss the lips, kiss the neck, feeling breasts and genitals, rubbing the genitals, sexual intercourse)

Table 4 Risk Factors for Sexual Activity among College Students in Surabaya City, Indonesia (n=152)

Variable	Sexual Activity		P-value*	OR (95%CI)
	Extreme n (%)	Mild n (%)		
Gender				
Male	16 (66.7)	8 (33.3)	0.418	1.46 (0.58 - 3.66)
Female	74 (57.8)	54 (42.2)		
Age				
≥19 years old	21 (58.3)	15 (41.7)	0.902	0.95 (0.45 - 2.04)
< 19 years old	69 (59.5)	47 (40.5)		
Place of Residence				
Living alone	41 (57.7)	30 (42.3)	0.731	0.89 (0.48 - 1.72)
Living with parents	49 (60.5)	32 (39.5)		
Parents income(Rupiah)				
< 6 million	59 (57.3)	44 (42.7)	0.483	0.78 (0.39 - 1.57)
≥ 6 million	31 (63.3)	18 (36.7)		
Relationship				
Dating	84 (68.9)	38 (31.1)	0.000	8.84 (3.34 - 23.40)
Not dating	6 (20.0)	24 (80.0)		
Social media usage				
Negative	86 (59.3)	59 (40.7)	1.000	1.09 (0.24 - 5.07)
Positive	4 (57.1)	3 (42.9)		
Age of first sexual activity				
≥19 years old	77 (60.6)	50 (39.4)	0.422	1.42 (0.60 - 3.37)
< 19 years old	13 (52.0)	12 (48.0)		
Sexual consent				
No consent	2 (66.7)	1 (33.3)	1.000	1.39 (0.12 - 15.63)
With consent	88 (59.1)	61 (40.9)		
STI criteria				
Symptomatic	32 (58.2)	23 (41.8)	0.846	0.94 (0.48 - 1.83)
Asymptomatic	58 (59.8)	39 (40.2)		

Note: *Chi-Square test, significance if p-value < 0.05, STI= Sexually transmitted infections

homogeneous values, norms, and characters in an area, as shown in a study conducted in Asia and America. The democratic parenting patterns adopted by parents in Asian countries from American culture produce children who tend to fall into juvenile delinquency.¹³ Unlike children in America, they tend to be more mature, independent, and able to find solutions to their problems. Today's teenagers have various ways of dealing with the sexual hormones that appear in them. However, along with the development of increasingly advanced technology, many end up responding incorrectly, so that they engage in sexual activities that endanger themselves. Sexual behavior in adolescents is influenced by changes in perspective when adolescents are in a dating relationship.¹⁴ When in a dating relationship, adolescents tend to do things

that lead to sexual activity with the opposite sex, starting from holding hands, kissing foreheads, kissing lips, fingering, oral sex, to having sexual intercourse. This risky sexual activity is of course influenced by external factors that can have a negative impact on adolescents.¹⁵

Sexual activity is one of the causes of STIs. Risky sexual activity could trigger the incidence of STIs. This study shows that dating status is related to sexual activity, indicating that sexual activity is also triggered by dating relationships with the opposite sex. This dating behavior starts from just dating, seducing, and touching to kissing which stimulates sexual hormones to have sexual intercourse.¹⁶ Sexual activity is divided into two, namely mild sexual activity which includes holding hands, kissing foreheads, and hugging, and extreme

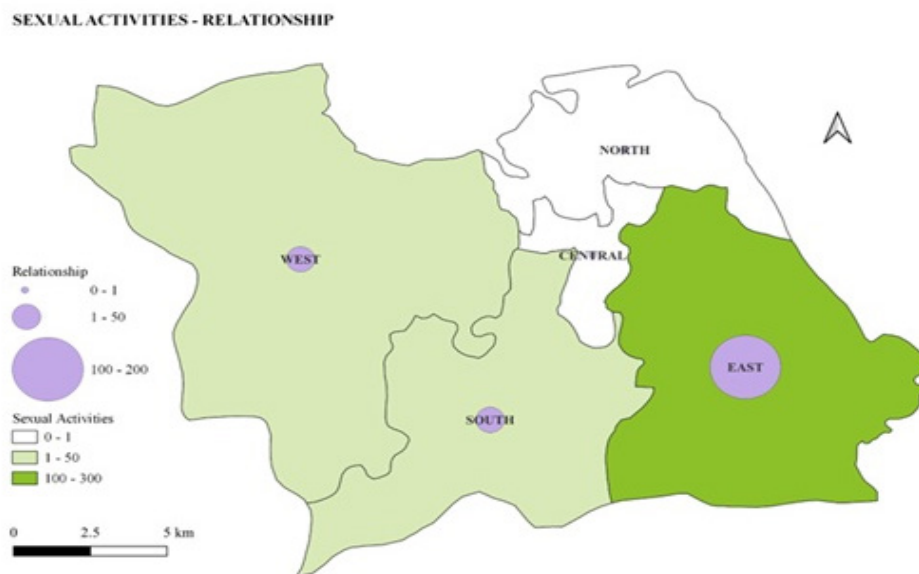


Figure 1 Distribution of Dating Status and Sexual Activity among Adolescents in Surabaya, Indonesia

sexual activity which includes kissing lips, kissing necks, hugging, groping breasts and genitals, rubbing genitals, and having sexual intercourse either oral sex, anal sex, or vaginal sex.¹⁷

The result of our study align with another study, showing that adolescents who are not dating tend to have favorable perceptions regarding premarital sexual behavior compared to adolescents who are dating.¹⁸ Moreover, adolescents who are not dating tend to have positive perceptions because they think that dating has a negative impact and means free sex that can lead to pregnancy outside of marriage. The dating style of adolescents may lead to sexual activities, such as hugging, kissing, petting, and having sex. Adolescents who have been psychologically exposed to information about sex have the potential to explore this matter more deeply. Attraction to the opposite sex that peaks in adulthood also naturally provides a solid impetus to dare to engage in sexual activities that are felt to cause feelings of happiness or as proof of love for one's partner.¹⁹ This sexual activity needs the consent from both parties.²⁰

Based on the results of this study, the majority of respondents have been in a relationship or dating. Dating is considered

to have a complex impact on student stress. When in a relationship or dating, adolescents feel that there is someone who provides emotional support when they are tired of studying. Dating is also a positive diversion from academic pressure.²¹ Adolescents who experience this will have a sense of security towards their partners. This feeling will eventually lead to sexual intimacy in the teenager.²² However, sexual relations carried out before marriage will lead to risky sexual activities because there is a high possibility of changing partners.²³ The unresolved problem of sexually transmitted diseases is exacerbated by the high rate of premarital pregnancies, most of which are not ready to face. The drastic change from a life that initially still depended on parents to suddenly having to change positions as parents without careful preparation and planning creates various complex problems ranging from mental health and physical to unexpected material losses.²⁴ It is not surprising that the maternal mortality rate in Indonesia has still not reached the 2024 target, which should be 183 cases per 100,000 live births; but at the end of 2023 it was still at 305 cases per 100,000 live births.²⁵ This health burden becomes more complex when rates of STIs also increase over time. Both

adolescent males and females are at equal risk of contracting sexually transmitted diseases if they do not change their behavior.²⁶ Even if a group of adolescents has the same sexual education, it will not necessarily result in the same behavior because self-control is also an important thing to train.²⁷ Every community group should take part in increasing awareness regarding sexually transmitted infections in the adolescent environment. Moreover, the government can strengthen regulations and make joint policies across sectors including education, religious, legal, and health. In addition, adult groups as parents should be more nurturing, increasing their role in directing the dynamics of adolescent life to a positive environment without subjective judgments that corner them.²⁸

This study has several limitations, for example, apart from dating relationships status, several other factors have not been able to provide valuable significance because respondents tend to come from the same educational background, namely college students. Besides, the distribution of the college areas is also less spread out, so the data collected is less varied.

In conclusion, there is a link between dating relationship status and sexual activity, indicating that dating status tends to lead to extreme sexual activity. The number of students who have dated and who have engaged in sexual activity is directly proportional in each region in Surabaya.

Premarital sexual activity among adolescents should be a warning to all member of society. Internalized religious faith, parent-teen and peer bonds, avoiding pornographic content, and refusal skills should be implemented as healthy traits to protect adolescents from unsafe premarital sex. Today's adolescents should be aware and educate themselves about healthy sex life because sex life involves physical and emotional changes.

References

1. WHO. Adolescent health [Internet]. [Cited 2025 March 3]. Available from: https://www.who.int/health-topics/adolescent-health#tab=tab_1.
2. Sawyer SM, Azzopardi PS, Wickremaratne D, Patton GC. The age of adolescence. *Lancet Child Adolesc Health*. 2018;2(3):223–8.
3. Open University. Adolescent and youth reproductive health: introduction to adolescent and youth reproductive health (AYRH) [Internet]. [Cited 2025 March 3]. Available from: <https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=62>.
4. Oktirianto O, Alfiasari A. Dating and premarital sexual initiation on adolescents in Indonesia. *KEMAS*. 2019;15(1):98–108.
5. Sari DE, Rokhanawati D. The correlation between age of first dating and sexual behavior of adolescents and young adults in Indonesia. *J Health Technol Assess Midwifery*. 2018;1(1):23–8.
6. Bowen VB, Braxton J, Davis DW, Flag EW, Grey J, Grier L, et al.. Sexually transmitted disease surveillance 2018. Atlanta; Centers for Disease Control and Prevention; 2019.
7. Wijayanti UT. Pacaran dan perilaku seksual remaja di Provinsi Sulawesi Utara (Analisis data survei RPJMN remaja tahun 2013). *J Ilmiah Society*. 2015;1(14):131–46.
8. Samosir DMCN. Kontrol sosial dan intensitas penggunaan internet pada perilaku seks sebelum menikah pada remaja. *Psikoborneo*. 2021;9(1):147–54.
9. Nuraeni S, Nainar AAA, Hikmah H. Hubungan penggunaan situs media sosial dengan perilaku seksual remaja di SMAN 14 kota Tangerang. *Jurnal JKFT*. 2021;6(2):31–8.
10. Widi S. Ada 68,66 juta generasi Z di Indonesia, ini sebarannya [Internet] 2022. [Cited 2023 August 18]. Available from: <https://dataindonesia.id/varia/detail/ada-6866-juta-generasi-z-di-indonesia-ini-sebarannya>.
11. Khairunisa SQ, Maharani AT, Utomo B, Mei Yuana DB, Hidayati AN, Nasronudin, et al. Characterization of spatial and temporal transmission of HIV infection in Surabaya, Indonesia: Geographic information system (GIS) cluster detection analysis (2016–2020). *Heliyon*. 2023;9(9):e19528.
12. Surabaya City Government. Sekilas Kota Surabaya [Internet]. 2025 [cited 2025 March 3]. Available from: <https://www.surabaya.go.id/page/0/76094/sekilas-kota-surabaya>.
13. Fadilah R. Perbedaan pola asuh remaja di Amerika dan Asia yang dapat mempengaruhi kenakalan remaja di sekolah. In: Mesiono M, editor. *Proceeding International Seminar and Conference Guidance and Counseling: the innovative strategy of guidance and counselling at school and madrasah industrial age 40 context*; 2019 August 01; Medan. Medan: UINSU Press; 2019. p. 512.
14. Hanifah SD, Nurwati RN, Santoso MB.

- Seksualitas dan seks bebas remaja. Jurnal Penelitian dan Pengabdian Kepada Masyarakat (JPPM). 2022;3(1):57-65.
15. Elvira E, Hastono SP, Misyta S. Faktor-faktor yang berhubungan dengan perilaku seksual pranikah remaja. Citra Delima. 2019;3(1):15-24.
 16. Fortenberry JD. Puberty and adolescent sexuality. Horm Behav. 2013;64(2):280-7.
 17. Gayatri S, Shaluhiah Z, Indraswari R. Faktor-faktor yang berhubungan dengan frekuensi akses pornografi dan dampaknya terhadap perilaku seksual pada remaja di kota bogor (Studi di SMA 'X' Kota Bogor). JKM. 2020;8(3):410-9.
 18. Setijaningsih T. Persepsi antara remaja yang berpacaran dengan remaja yang tidak berpacaran tentang perilaku seks pranikah. J Borneo Holistic Health. 2019;2(1):1-16.
 19. Prendergast LE, Toumbourou JW, McMorris BJ, Catalano RF. Outcomes of early adolescent sexual behavior in Australia: longitudinal findings in young adulthood. J Adolesc Health. 2019;64(4):516-22.
 20. Marcantonio T, Jozkowski KN, Wiersma-Mosley J. The influence of partner status and sexual behavior on college women's consent communication and feelings. J Sex Marital Ther. 2018;44(8):776-86.
 21. Pulubuhu DAT, Radjab M, Nufida RAF, Genda A, Arifin S, Patading MM. Studi Fenomenologi Pada Perilaku Seksual Mahasiswa Di Kota Makassar. Hasanuddin J Sociology. 2020;2(2):98-119.
 22. Siregar RE, Apriliani, Hasanah NF, Siregar SF, Siregar PA. Analisis faktor perilaku seksual remaja di kota Medan. AN-Nur. 2020;1(1):99-108.
 23. Natalia S, Sekarsari I, Rahmayanti F, Febriani N. Resiko Seks Bebas dan Pernikahan Dini Bagi Kesehatan Reproduksi Pada Remaja. J Community Engage Health. 2021;4(1):76-81.
 24. Alifah AP, Apsari NC, Taftazani BM. Faktor yang mempengaruhi remaja hamil di luar nikah. Jurnal Penelitian dan Pengabdian Kepada Masyarakat (JPPM). 2021;2(3):529-37.
 25. Ministry of Health Republic of Indonesia. Turunkan angka kematian ibu melalui deteksi dini dengan pemenuhan USG di Puskesmas [Internet]. 2023 [cited 2023 Aug 18]. Available from: <https://kemkes.go.id/id/turunkan-angka-kematian-ibu-melalui-deteksi-dini-dengan-pemenuhan-usg-di-puskesmas..>
 26. Aningsih B, Suhaid D, Wardani DK, Pratiwi A, Manungkalit E, Widowati L. Hubungan jenis kelamin dan pengetahuan tentang IMS dengan perilaku seks bebas pada remaja. Jurnal Kebidanan. 2023;12(1):1-7.
 27. Fitriani Y, Wahyuni A. Efektivitas strategi pencegahan dalam menanggulangi infeksi menular seksual pada remaja: a literature review. J Inform Med. 2023;1(1):36-41.
 28. Fatimah S, Nuraninda FA. Peranan orang tua dalam pembentukan karakter remaja generasi 4.0. J Basicedu. 2021;5(5):3705-11.