

# The Effect of Education on Knowledge of Sexually Transmitted Infections in Women of Reproductive Age at Lee Health Center, North Morowali Regency

Mutmaina<sup>1\*</sup>, Gabriella Sakulat<sup>2</sup>

<sup>1,2</sup> Universitas Widya Nusantara, Palu, Central Sulawesi, Indonesia

## Article History

Received: March 2025

Accepted: April 2025

Published: April 2025

## \*Correspondent:

Mutmaina

Universitas Nusantara, Palu,  
Central Sulawesi, Indonesia

## Email:

[mutmaina@uwn.ac.id](mailto:mutmaina@uwn.ac.id)

## Abstract

**Introduction:** Women's health, both in youth and adulthood, often faces reproductive health issues such as infections of the reproductive organs, including sexually transmitted infections (STIs). Education on STIs is essential for improving awareness and prevention. **Objective:** The aim of this study was to provide education about STIs to women of reproductive age and assess the improvement in their knowledge. **Method:** This is a quantitative study with a quasi-experimental design using a one-group pretest and posttest approach. The sample consisted of 30 women of reproductive age, selected through total sampling. Data were collected using a questionnaire, and data analysis was performed using the Wilcoxon statistical test with a significance level of  $\alpha = 0.05$ . **Results:** After receiving education on STIs, 19 respondents (63.3%) demonstrated good knowledge, 11 respondents (36.7%) had sufficient knowledge, and no respondents had poor knowledge. The analysis revealed a significance value of  $\text{Sig} < 0.05$ , indicating a significant effect of the education on improving knowledge about STIs in women of reproductive age. **Conclusion:** The study concluded that education significantly improved the knowledge of women of reproductive age about sexually transmitted infections, highlighting the importance of such educational interventions in promoting better reproductive health awareness.

**Keywords:** Women's health, Reproductive age, sexually transmitted infections, STI education, Knowledge improvement, public health intervention

## Introduction

Sexually transmitted infections (STIs) infections transmitted through sexual contact, including oral, vaginal, or anal intercourse, particularly when practiced unsafely. The primary risk factor for STIs is engaging in unprotected sexual activities with an infected partner or having multiple sexual partners. In addition to sexual transmission, STIs may also spread through non-sexual routes, such as sharing contaminated needles, syringes, or through blood transfusions. Although anyone who is sexually active is at risk of contracting STIs, individuals with high-risk sexual behaviors such as having multiple sexual partners and inconsistent condom use are particularly vulnerable (1)

STIs affects the reproductive organs and are transmitted through sexual activity. STIs are also known as STDs or, in some literature, as Reproductive Tract Infections (RTIs). Transmission of STIs generally occurs through sexual contact with an infected individual. However, certain types of STIs, such as Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS), can also be transmitted through non-sexual means, such as blood transfusions or the use of non-sterile needles, particularly those previously used by individuals with STIs.(2). STIs primarily transmitted through sexual contact. In addition to sexual transmission, STIs can also be passed from mother to fetus during pregnancy or childbirth, as well as through blood transfusions and organ or tissue transplants. These infections can be caused by over 30 different bacteria, viruses, and parasites. The actual incidence and prevalence of STIs in various countries remain uncertain. WHO estimates that there are over 340 million new cases annually of treatable STIs—such as syphilis, gonorrhea, *Chlamydia trachomatis*, and *Trichomonas vaginalis*—particularly among men and women aged 15 to 49 years(3).

In developing countries, STIs and their complications rank among the top five adult diseases requiring significant healthcare services. STIs can cause acute symptoms, chronic infections, and serious consequences such as infertility, ectopic pregnancy, cervical cancer, and sudden death in both infants and adults. More than 30 types of pathogens can be transmitted through sexual contact, with clinical manifestations that vary depending on gender and age. Although STIs are primarily transmitted through sexual intercourse, they can also be passed from mother to fetus during pregnancy or childbirth, through contaminated blood products or tissue transplants, and occasionally through contaminated medical instruments(4). With ongoing developments in social and demographic factors, as well as increasing population migration, the number of individuals at high risk of contracting Sexually Transmitted Infections (STIs) is expected to rise significantly. Although developing countries will bear the greatest burden, developed nations are also vulnerable due to the spread of untreatable viral STIs, risky sexual behavior, and the growth of international tourism. STIs rank among the top ten most common reasons for seeking medical care in many developing countries. The financial burden of treatment can significantly affect household income (5).

In Indonesia, during the period from January to March 2021, the total number of cases of Sexually Transmitted Infections (STIs) identified using syndromic diagnosis reached 7,364 cases, while laboratory-confirmed cases amounted to 11,133. The highest number of STI cases based on risk group were as follows (in descending order): high-risk sexual partners (3,063), men who have sex with men (MSM) (2,036), female sex workers (FSWs) (1,496), clients of sex workers (909), transgender individuals (142), male sex workers (13), and injecting drug users (6). The reported number of STI cases based on a syndromic approach included: vaginal discharge (5,160 cases), urethral discharge (1,451 cases), genital ulcers (214 cases), inguinal bubo (8 cases), pelvic inflammatory disease (27 cases), scrotal swelling (19 cases), genital growths/vegetation (424 cases), neonatal conjunctivitis (6 cases), and anal discharge (55 cases). Meanwhile, STI cases reported based on laboratory examinations included: early syphilis (2,976 cases), late syphilis (892 cases), gonorrhea (1,482 cases), gonococcal urethritis (1,004 cases), non-gonococcal urethritis (1,250 cases), cervicitis/proctitis (3,031 cases), lymphogranuloma venereum (LGV) (13 cases), trichomoniasis (342 cases), and genital herpes (143 cases) (6).

Several previous studies have highlighted the high number of cases of Sexually Transmitted Infections (STIs) found in this research, which should be given special attention, particularly in managing patients who are still in their productive years. Efforts that can be made include providing education about the dangers of STIs and offering psychosocial support to adolescents affected by STIs, so they can lead healthier and more productive lives (2).

## Methods

This study utilized a quantitative research design, which is systematic, structured, and based on positivist philosophy to test hypotheses using statistical analysis (Sugiyono, 2011). This is a quasi-experimental study with a one-group pretest-posttest design. The population in this study consisted of 30 women of reproductive age (WUS). The sample was drawn using total sampling, selecting all eligible individuals from the target group.

The study was conducted at the Lee Health Center from August to September 2022. Data were collected, tabulated, and analyzed using SPSS version 22. Univariate Analysis: Describes the characteristics of each variable, with data presented in frequency distribution tables for categorical data. Bivariate Analysis: Examines the relationship between two variables (independent and dependent) using normality tests and either parametric (T-test) or non-parametric (Wilcoxon) tests depending on data distribution. A p-value  $> 0.05$  indicates normal distribution, while  $p < 0.05$  indicates a non-normal distribution.

## Results

### *Respondent Characteristics*

**Table 1 Respondent Characteristics**

Age	n	%
< 20 Year	7	23.2
20thn -35 Year	15	50.0
>35 Year	8	26.7
Total	30	100
Education	n	%
SD-SMP	18	58.1
SMA	13	41.9
Total	30	100
Marriage Duration	n	%
0-3 Year	15	50.0
4-8 Year	9	30.0
>8 Year	6	20.0
Total	30	100

Based on the table above, the number of respondents in the age group below 20 years was 7 individuals (23.2%), in the 20 to 35 years age group was 15 individuals (50.0%), and in the age group above 35 years was 8 individuals (26.7%). Regarding education level, 18 respondents (58.1%) had completed primary to junior high school, while 13 respondents (41.9%) had completed senior high school. In terms of marriage duration, 15 respondents (50.0%) were married for 0 to 3 years, 9 respondents (30.0%) were married for 4 to 8 years, and 6 respondents (20.0%) were married for more than 8 years.

### *Univariate Analysis*

**Table 2 Knowledge regarding PMS before giving education**

Knowledge	n	%
<i>Good</i>	3	10.0
<i>Sufficient</i>	14	46.7
<i>Insufficient</i>	3	43.3
Total	30	100

Based on the table 2, prior to the education on STIs, the knowledge category was as follows: 19 respondents (63.3%) had good knowledge, 11 respondents (36.7%) had sufficient knowledge, and 3 respondents (43.3%) had insufficient knowledge.

**Table 3 Knowledge regarding PMS after giving education**

Knowledge	n	%
<i>Baik</i>	19	63.3
<i>Cukup</i>	11	36.7
<i>Kurang</i>	0	0.0
Total	30	100

Based on the table 3, after providing education on STIs, 19 respondents (63.3%) had good knowledge, 11 respondents (36.7%) had sufficient knowledge, and no respondents had insufficient knowledge.

*Bivariate Analysis***Table 4 Different knowledge level before and after giving education**

Knowledge	Pre Test		Post Test		<i>p-Value*</i>
	n	%	n	%	
<i>Baik</i>	3	10.0	19	63.3	0.000
<i>Cukup</i>	14	46.7	11	36.7	
<i>Kurang</i>	3	43.3	0	0.0	
Total	30	100	30	100	

\**Wilcoxon*

Based on the table 4, before the education on STIs was provided, the knowledge category of respondents was as follows: 19 respondents (63.3%) had good knowledge, 11 respondents (36.7%) had sufficient knowledge, and 3 respondents (43.3%) had insufficient knowledge. After the education on STIs, 19 respondents (63.3%) had good knowledge, 11 respondents (36.7%) had sufficient knowledge, and no respondents had insufficient knowledge. The P-value was 0.000.

**Discussion**

The analysis results from the test conducted to examine the effect of education on the improvement of knowledge regarding STIs among women of childbearing age (WUS) showed a significant effect, with a P-value < 0.05. This indicates that education significantly influenced the improvement of knowledge among WUS. This study aligns with the research conducted by [Author 7] (7), which found that after counseling and education on reproductive disorders, particularly menstrual disorders and sexually transmitted infections (STIs), 88 women (60%) exhibited good knowledge of reproductive health.

A previous study Sukmasari F. et al. (8) used a correlational research design with a cross-sectional approach. The population size was 2,375, and the sample consisted of 350 respondents. The validity test for the 30 knowledge-related questions was found to be valid, and the behavior-related questions were also validated. The reliability test yielded values of 0.749 for knowledge and 0.811 for behavior, both indicating strong reliability. Data analysis was performed using the chi-square test. The results indicated that 62.6% of respondents had good knowledge, and 87.4% had good prevention behaviors. The chi-square test resulted in a P-value of 0.000. The study concluded that there was a significant relationship between women's knowledge of STIs and their prevention behaviors in Baros Village, Sukabumi.

The research findings indicate that respondents who participated in the education sessions improved their knowledge. This improvement can be attributed to various factors, such as the respondents' active listening to the information provided by the educator. However, some respondents were not fully attentive during the sessions, which is a limitation that affected the intervention's overall effectiveness. Formal education also plays a significant role in increasing knowledge. Higher education is expected to broaden a person's knowledge base.

According to the results of this study, the knowledge of women of childbearing age directly influences their behavior in preventing sexually transmitted infections. With good knowledge, individuals are more likely to adopt preventive behaviors, which is consistent with the theory that good knowledge leads to better prevention of sexually transmitted infections.

## Conclusion

After the education on sexually transmitted infections (STIs) was provided, the knowledge of the mothers in the "good" category was 19 respondents (63.3%), "adequate" knowledge was 11 respondents (36.7%), and there were no mothers with "poor" knowledge. There is a significant effect of the educational intervention on the improvement of knowledge regarding sexually transmitted infections among women of childbearing age (WUS).

## Acknowledgments

Authors would like to Department of Midwifery Institut Kesehatan dan Bisnis Kurnia Jaya Persada Palopo, South Sulawesi, Indonesia in facilitating this research.

## Conflict of Interest

The authors declare that there's no conflict of interest regarding this article.

## Reference

1. WD SM, Pamungkas CE, Lestari CI. Gambaran Perilaku Pencegahan Infeksi Menular Seksual (Ims) Di Tempat Hiburan Kawasan Wisata Senggigi. *Midwifery J J Kebidanan UM Mataram*. 2020;5(1):24.
2. Tuntun M. Faktor Resiko Penyakit Infeksi Menular Seksual (IMS). *J Kesehat*. 2018;9(3):419.
3. Anis Kiswanti. SMS REMINDER UNTUK PENINGKATAN PERILAKU PENCEGAHAN HIV/AIDS DAN IMS. *J Heal Educ*. 2017;2(1):1–10.
4. Mongan EA. Pemeriksaan Infeksi Menular Seksual (Ims) Pada Ibu Hamil Di Puskesmas Kotaraja Kota Jayapura Papua. *Glob Heal Sci*. 2019;4(2):59–63.
5. Refti WG. Faktor Resiko yang Berhubungan dengan Kejadian Infeksi Menular Seksual (IMS) di Klinik Voluntary Counseling Test (VCT). *J Aisyah J Ilmu Kesehat*. 2018;3(1):47–60.
6. Direktur Jenderal P2P. Laporan Perkembangan HIV AIDS & Penyakit Infeksi Menular Seksual (PIMS) Triwulan I Tahun 2021. Kementerian Kesehat RI. 2021;4247608(021):613–4.
7. Anandita Mella Yuria Rachma. Edukasi Pada Wanita Usia Subur Tentang Gangguan Sistem Reproduksi. *J Pengabdian Masy Bakti Parahita*. 2021;02(02)(PENDAHULUAN):189–90.
8. Sukmasari F, Safariyah E, Muslim N. Hubungan Pengetahuan Wanita Usia Subur Tentang Infeksi Menular Seksual Dengan Perilaku Pencegahan Infeksi Menular Seksual Dikelurahan Baros Wilayah Kerja Puskesmas Baros. *Ummi*. 2018;12(3):61–70.
9. WD SM, Pamungkas CE, Lestari CI. Gambaran Perilaku Pencegahan Infeksi Menular Seksual (Ims) Di Tempat Hiburan Kawasan Wisata Senggigi. *Midwifery J J Kebidanan UM Mataram*. 2020;5(1):24.
10. Tuntun M. Faktor Resiko Penyakit Infeksi Menular Seksual (IMS). *J Kesehat*. 2018;9(3):419.
11. Anis Kiswanti. SMS REMINDER UNTUK PENINGKATAN PERILAKU PENCEGAHAN HIV/AIDS DAN IMS. *J Heal Educ*. 2017;2(1):1–10.
12. Mongan EA. Pemeriksaan Infeksi Menular Seksual (Ims) Pada Ibu Hamil Di Puskesmas Kotaraja Kota Jayapura Papua. *Glob Heal Sci*. 2019;4(2):59–63.
13. Refti WG. Faktor Resiko yang Berhubungan dengan Kejadian Infeksi Menular Seksual (IMS) di Klinik Voluntary Counseling Test (VCT). *J Aisyah J Ilmu Kesehat*. 2018;3(1):47–60.
14. Direktur Jenderal P2P. Laporan Perkembangan HIV AIDS & Penyakit Infeksi Menular Seksual (PIMS) Triwulan I Tahun 2021. Kementerian Kesehat RI. 2021;4247608(021):613–4.

15. Yulianti, Karima. Muthoharoh, Ainun. Ningrum, Wulan Agustin. Permadi YW. PENGARUH EDUKASI MELALUI LEAFLET TERHADAP PENGETAHUAN SWAMEDIKASI ANTINYERI RASIONAL DI KECAMATAN KEDUNGWUNI PEKALONGAN. 2021;5(2):121.
16. A'yunin Q. Tentang Infeksi Pada Ruptur Perineum Di Rb . Mattiro Baji Sunguminasa Karya Tulis Ilmiah. Kebidanan. 2016;01(01):1-2.
17. Kora FT, Dasuki D, Ismail D. Pengetahuan tentang Infeksi Menular Seksual dengan Perilaku Seksual Tidak Aman pada Remaja Putri Maluku Tenggara Barat di Daerah Istimewa Yogyakarta. J Kesehat Reproduksi. 2016;3(1):50.
18. Ambarwati K. Efektivitas Booklet Sebagai Media Promosi Terhadap Peningkatan Pengetahuan Tentang Kekerasan Seksual Pada Anak. Univ Muhammadiyah Pontianak. 2018;
19. Ronauli LN, Indriani F. Analisis Faktor-Faktor yang Mempengaruhi Preferensi Konsumen Terhadap Keputusan Pembelian Obat Generik (Studi Pada Konsumen di Apotek Kimia Farma Pandanaran Kota Semarang). J Sains Pemasar Indones (Indonesian J Mark Sci. 2020;19(3):159-74.
20. Septiani R, Kebidanan J, Kemenkes Tanjungkarang P. Pengetahuan, Sikap Ibu Hamil Dan Dukungan Suami Dengan Keikutsertaan Ibu Hamil Dalam Kelas Ibu Hamil Di Puskesmas Kota Metro Lampung. 2013;
21. Achdiat PA, Rowawi R, Fatmasari D, Johan R. Tingkat Pengetahuan Penyakit Infeksi Menular Seksual Dan Komplikasinya Pada Siswa Sekolah Menengah Atas Negeri Jatinangor. Dharmakarya. 2019;8(1):35.
14. Saenong RH, Sari LP. Hubungan Tingkat Pengetahuan dengan Sikap Terhadap Infeksi Menular Seksual pada Mahasiswa Pendidikan Dokter. Muhammadiyah J Midwifery. 2021;1(2):51.
15. Betan A, Pannyiwi R. Analisis Angka Kejadian Penyakit Infeksi Menular Seksual. J Ilm Kesehat Sandi Husada. 2020;12(2):824-30.
16. Rodiani, Rusfiana A. Hubungan Premenstrual Syndrome ( PMS ) terhadap Faktor Psikologis pada Remaja The Relationship of Premenstrual Syndrome ( PMS ) with Psychological Factor in Adolescent. HubunganPremenstrual Syndr terhadap Fakt Psikologis pada Remaja. 2016;5(1):18-22.
17. Italia, Ramona Y. Studi Litelatur Analisis Penanganan Premenstrual Syndrome ( Pms ) Pada Remaja. J Keperawatan Merdeka. 2021;1(2):183-90.