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Prevalence Study of Sexually Transmitted Infections in Pre-Marital Couples Undergoing Pre-Marital Checkups at the Bantimurung Community Health Center

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ABSTRACT

Sexually transmitted infections (STIs) are an important public health issue, especially among adults of reproductive age. Premarital screening plays a strategic role in the early detection of STIs to prevent transmission to partners and offspring. This study aims to determine the prevalence of sexually transmitted infections (STIs) and the characteristics of prospective brides and grooms who undergo premarital examinations at the Bantimurung Community Health Center (UPTD Puskesmas Bantimurung). This study used a descriptive design with a cross-sectional approach. The sample was determined using purposive sampling with a total of 64 respondents, and the sample size was calculated using the Lemeshow formula. This study was conducted from March 3 to June 2, 2025. Data were obtained through laboratory tests, including detection of HIV, syphilis, and hepatitis B using rapid diagnostic tests, as well as structured interviews regarding risk factors. The results showed that most respondents were aged 25–30 years (33 people or 52%), 20–24 years (21 people or 33%), above 30 years (9 people or 14%), and 19 years (1 person or 2%). Based on gender, there were 30 males (47%) and 34 females (53%). Laboratory results showed an STI prevalence of 1.6%, with one reactive syphilis case and 63 (98.4%) non-reactive cases, while all respondents were non-reactive for HIV and hepatitis B. It was concluded that the prevalence of STIs among prospective brides at the Bantimurung Community Health Center was low, with the main risk factors being low knowledge and risky sexual behavior. It is recommended that further research be conducted with a larger sample size and wider coverage area to obtain more representative results, as well as increased education about reproductive health and the importance of premarital checkups in preventing STIs.
Keywords : Sexually transmitted infections ; premarital examination; prospective brides; prevalence, bantimurung community health center

INTRODUCTION

Sexually transmitted infections (STIs) are a serious global health problem that are transmitted through sexual contact, whether vaginal, oral, or anal[1]. According to the World Health Organization[2], STIs cause approximately 630,000 deaths and 1.3 million new cases each year. Key risk factors include unprotected sexual intercourse, multiple sexual partners, a history of STIs, and the use of alcohol or drugs[3].

Globally, cases of HIV, syphilis, and hepatitis B remain high. In 2021, there were 38.4 million people living with HIV, mainly in Africa[4]. Syphilis reached 8 million cases[5], and hepatitis B caused 820,000 deaths[6]. In Indonesia, the 20–49 age group dominates STD cases[7]. The prevalence of STDs such as hepatitis B, syphilis, and HIV in Indonesia is a major challenge, especially for the productive age group. Based on data from the Ministry of Health, the 20-49 age group has the highest risk. In 2023, there were 57,299 cases of HIV and 16,410 cases of AIDS. East Java reported the highest number of cases with 9,500 cases, followed by West Java with 7,953 cases, and DKI Jakarta with 5,569 cases. Additionally, the number of syphilis cases reached 25,994, with West Java recording 1,547 cases, West Papua 758 cases, and South Papua 667 cases. Meanwhile, the number of pregnant women with reactive HBsAg results reached 50,789 cases, with the highest distribution in East Java at 8,036 cases, West Java at 7,499 cases, and Central Java at 4,709 cases [8].

Pre-marital screening is an important preventive measure, but it still faces challenges due to low participation, especially among prospective grooms[9]. At the Bantimurung Community Health Center, screening for sexually transmitted infections (STIs) has never been conducted on prospective brides and grooms, resulting in several new cases being detected after marriage. A case at the Bantimurung Community Health Center underscores the importance of premarital checkups. A man was diagnosed with HIV a year after getting married, after undergoing treatment for chronic cough and shortness of breath. A tuberculosis (TB) test was performed, and he was confirmed to have TB, so his HIV status was also tested and the results showed that he was HIV-positive. The man then transmitted the virus to his wife[10].

This study was first conducted in Maros Regency, specifically in Bantimurung District, due to the presence of HIV-positive cases in newly married couples. The aim was to determine the prevalence of sexually transmitted infections (STIs) among prospective brides and grooms undergoing premarital examinations at the Bantimurung Community Health Center (UPTD Puskesmas Bantimurung) and to identify factors influencing their participation. Using a descriptive approach that combines laboratory tests and interviews, this study is expected to provide accurate data on the prevalence of STIs and their risk factors. The results of this study are expected to form the basis for designing more effective health education and policy

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programs for the prevention and control of STIs, as well as improving the reproductive health of the community.

MATERIALS AND METHODS

This study is a descriptive study with a cross-sectional approach. This design was used to describe an event at a single measurement point, integrating laboratory tests and interviews to obtain information on the prevalence and risk factors associated with sexually transmitted infections (STIs) among prospective brides undergoing premarital examinations at the Bantimurung Community Health Center (UPTD Puskesmas Bantimurung). This study was conducted at the Bantimurung Community Health Center, Maros District, South Sulawesi Province, during the period from March 3 to June 2, 2025.

The sampling technique used in this study was purposive sampling. Inclusion criteria: Prospective brides and grooms who were willing to provide data and undergo examination procedures related to this study. Exclusion criteria: Blood samples that experienced hemolysis, lipemia, or jaundice. The number of specimens was determined by calculating using the Lemeshow formula[11] . This formula is used to determine the minimum sample size required so that the research results can represent the population with a certain level of confidence. The Lemeshow formula is expressed as $n = Z^2 \times p\ (1 - p) / d^2$, where n is the number of samples required, Z is the Z value at a 95% confidence level, which is 1.96, p is the maximum estimated proportion of 0.5, and d is the error level set at 0.2. Based on this formula, the following calculation is performed: $n = 1.96^2 \times 0.5\ (1 - 0.5) / 0.2^2 = 3.8416 \times 0.5 \times 0.5 / 0.04 = 0.9604 / 0.04 = 24.01$. Thus, the minimum sample size required for this study is 24 couples or 48 individuals. This study has obtained ethical approval from the institutional review committee, and written consent is provided on the first page of the premarital health examination questionnaire.

The tools to be used in this study are questionnaires, rapid test kits (Triple Elimination) Indec Diagnostics, 3 cc syringes, EDTA tubes, tourniquets, plasters, medical gloves, medical masks, lab coats, 70% alcohol swabs, pipettes or transfer pipettes, cotton wool, timers or stopwatches, medical waste bins, and needle waste bins. The materials to be used in this study are complete blood samples placed in tubes with EDTA anticoagulant and buffer (according to the rapid test instructions).

The examination procedure in this study consisted of three stages, namely pre-analytical, analytical, and post- analytical. In the pre-analytical stage, equipment and materials were prepared, respondents were interviewed, personal protective equipment (PPE) such as gloves and masks were used, and patients were identified to ensure that samples were taken correctly. The analytical stage begins by ensuring that the rapid diagnostic test (RDT) kit is at room temperature (20–30 °C), then opening the HIV, syphilis, and hepatitis B kit packaging and placing it on a clean, flat surface. The patient's identity is written on each RDT device. Next, blood is dripped into the well (20 µl for HIV and syphilis, 100 µl for HBsAg), then 3 drops of buffer are added for HIV and 2 drops for syphilis. The results are read within 15–20 minutes according to the kit instructions. In the post-analytical stage, the test results are interpreted and recorded in a report as part of the research documentation.

The data obtained were analyzed descriptively to determine the prevalence of sexually transmitted infections. The results are presented in the form of frequency distributions and percentages based on the categories of rapid test results for syphilis, hepatitis B, and HIV/AIDS.

RESULTS

Based on research conducted from March 3 to June 2, 2025, at the Bantimurung Community Health Center Laboratory. The specimens used were blood specimens. The results of the research are as follows:

Tabel 1 Characteristics of Respondents Based on Gender

Characteristics	Category	Number	Percentage (%)
Gender	Male	30	47%
	Female	34	53%
Total		64	100%

Source: Primary data

Analysis of respondent characteristics based on gender shows that of the total 64 respondents, 30 (47%) were male and 34 (53%) were female. Thus, it can be seen that the proportion of female respondents was slightly higher than that of male respondents. Overall, there were 64 respondents (100%) in this study.

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Tabel 2. Respondent Characteristics Based on Age

Characteristics	Category	Number	Percentage (%)
Age	19 years old	1	2%
	20-24 years old	21	33%
	25-30 years old	33	52%
	>30 years old	9	14%
Total		64	100%

Source: Primary data

Based on the characteristics of respondents according to age, it is known that of the total 64 respondents, there was 1 person (2%) who was 19 years old. The 20–24 age group consisted of 21 respondents (33%), while the 25–30 age group was the largest group with 33 respondents (52%). In addition, there were 9 respondents (14%) who were over 30 years old. Overall, the total number of respondents in this study was 64 people (100%).

Tabel 3. Frequency Distribution Table and Percentage of Rapid Test Results

Test Type	Result	Frequency	Percentage (%)
HIV	Non Reactive	64	100.0%
	Reactive	0	0.0%
Syphilis	Non Reactive	63	98.4%
	Reactive[1]	1	1.6%
Hepatitis B	Non Reactive	64	100.0%
	Reactive	0	0.0%

Source: Primary data

The results of the rapid test showed that all respondents tested non-reactive for HIV (64 people, 100%) and hepatitis B (64 people, 100%). In the syphilis test, the majority of respondents also obtained Non-Reactive results (63 people, 98.4%), while only 1 respondent (1.6%) showed Reactive results. These findings illustrate that almost all respondents had rapid test results that did not indicate infection in the three types of tests.

Tabel 4. Distribution of Respondents Based on Examination and Risk Factors for Sexually Transmitted Infections (STIs) among Prospective Brides at the Bantimurung Community Health Center

Questions	Answer Categories	Number (n)	Percentage (%)
A. Previous Premarital Examination	Yes	7	10,9
	No	57	89,1
B. Ever Diagnosed with STIs	Yes	0	0
	No	64	100
→ If Yes, Type of STI	Hepatitis B	0	0
	Sifilis	0	0
	HIV/AIDS	0	0
	Others	0	0
C. Symptoms Experienced	Pain during urination	3	4,7
	Sores on the genitals	0	0
	Abnormal discharge from the genitals	2	3,1
	Itching/rash on the genitals	5	7,8
	No symptoms	51	79,7
D. Ever had a sexual partner	Yes	4	6,3

[1] The respondent was 25 years old with a history of experiencing typical PMS symptoms, such as dysuria and abnormal genital discharge, and used crystal methamphetamine and had a history of changing sexual partners since adolescence.

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Questions	Answer Categories	Number (n)	Percentage (%)
other than your fiance	No	60	93,8
E. Use of Protective	Always	0	0
Equipment (Condoms)	Sometimes	1	1,6
	Never	63	98,4
F. Ever Used Drugs with a	Yes	1	1,6
Needle	No	63	98,4
G. Have you ever received a	Yes	0	0
blood transfusion?	No	64	100
H. Understanding STI Risks	Yes	38	59,4
and How to Prevent Them	No	26	40,6
I. Sources of Information on	Health workers	38	59,4
Premarital Checkups	Family/friends	12	18,8
	Social media	6	9,4
	Books/brochures	1	1,6
	Other	7	10,9
J. Having Concerns about	Yes	0	0
Sexual Health	No	64	100

Source: Primary data

DISCUSSION

This study aims to determine the prevalence of sexually transmitted infections (STIs) among prospective brides and grooms undergoing premarital examinations in the working area of the Community Health Center and Religious Affairs Office of Bantimurung District. A total of 64 respondents underwent testing using Rapid Diagnostic Tests (RDT) to detect HIV, hepatitis B, and syphilis. Laboratory results showed that 63 respondents (98.4%) were non-reactive to all three infections, while 1 respondent (1.6%) was reactive to syphilis. This study has limitations in terms of generalizing the results because it was conducted in only one location, namely the Bantimurung Community Health Center. The conditions and characteristics of the respondents in this location may not necessarily represent the population of prospective brides and grooms in other regions.

Most respondents (89.1%) had never undergone a premarital examination before, and all of them stated that they had no history of STI diagnosis. Although the majority of respondents (79.7%) did not experience any symptoms, about 20.3% reported complaints such as pain during urination, abnormal discharge, or itching in the genitals. Regarding sexual behavior, 93.8% of respondents had only one sexual partner. A total of 59.4% of respondents had knowledge about STDs, most of which was obtained from health workers. However, all respondents claimed to have no particular concerns about their sexual health.

These findings show consistency between laboratory results and questionnaire data, reflecting a sufficient level of knowledge, low levels of risky sexual behavior, and no active symptoms of STIs in the majority of respondents[12]. This reinforces the assumption that education and healthy sexual behavior are protective factors against STI transmission[13], as confirmed in a study by Oharume which states that there is a significant relationship between knowledge and perception of the risk of contracting STIs[14].

The reactive syphilis case found in one respondent requires special attention. Based on the questionnaire, this respondent admitted to having experienced typical STD symptoms, such as dysuria and abnormal genital discharge, approximately seven years ago. He also admitted to having used crystal methamphetamine in the last three months, although not through injection. During the counseling session after the examination, the respondent revealed a history of changing sexual partners since adolescence and only stopped this habit in the past year. This openness only emerged after receiving education and counseling, highlighting the importance of a humanistic approach in the premarital screening process[15].

The majority of respondents were aged between 25 and 30 years old, which is a productive age group with high potential for sexual activity[16]. Therefore, premarital checkups are not only important for prospective spouses, but also strategic in preventing the transmission of sexually transmitted infections in the wider population[17]. Research by Wulandari shows that integrating premarital examinations into primary health care services can effectively reduce the risk of STIs through early detection and targeted interventions[18].

All of these results emphasize the importance of prenuptial examinations as a preventive and promotive measure. Laboratory-based screening and questionnaire interviews complement each other in detecting hidden conditions that are not always clinically apparent[19]. Supporting literature such as from Dwiyanti & Dewi,; Winarto et al. further reinforces that adequate knowledge and promotion of sexual health through premarital programs can significantly reduce the prevalence of STIs[20;21].

The success of this program is also inseparable from the government's efforts in reproductive health

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education and widespread hepatitis B immunization coverage in Indonesia[22]. However, it should be noted that there is a window period for HIV infection, a period during which antibodies have not yet formed, so test results may be negative even though infection is present[23]. Therefore, repeat testing or confirmation using more sensitive methods such as NAT (nucleic acid test) is recommended for high-risk individuals[24].

Thus, these findings emphasize the importance of a multidimensional approach to preventing STDs, which includes education, counseling, health promotion, and early detection through laboratory testing[25]. The successful identification of reactive syphilis cases also proves the effectiveness of premarital screening in revealing hidden risks that could potentially have long-term effects on the health of couples and their offspring.

CONCLUSION AND RECOMMENDATIONS

The majority of prospective brides and grooms in the Bantimurung Community Health Center working area tested non-reactive for HIV and hepatitis B, reflecting good health. However, one case of reactive syphilis (1.6%) was found, indicating that sexually transmitted infections can still occur despite low prevalence. Premarital screening, which includes interviews, questionnaires, and education, has proven effective in identifying risky behaviors that are not detected through laboratory tests alone. Low knowledge and a history of unsafe sexual behavior and drug use are the main risk factors revealed through the respondents' openness during the education process.

Based on the results of the study, it is recommended that further studies be conducted with a larger sample size and a wider area so that the results are more representative of the population. Pre-marital checkups should be made a routine program that includes HIV, syphilis, and hepatitis B tests, accompanied by counseling so that prospective brides and grooms understand their health conditions. Education on reproductive health and the prevention of sexually transmitted infections needs to be improved through outreach activities at community health centers and cooperation with the Office of Religious Affairs.

In addition, the referral system for prospective brides and grooms with reactive results needs to be clarified so that they can be treated immediately. Pre-marital examinations should also be understood by the community as an important step in maintaining the health of oneself and one's partner, not just a formality. Increasing knowledge and awareness from an early age through reproductive health education will help prevent the spread of STIs in the community.

REFERENCES

1. WHO. (2024). Implementing the global health sector strategies on HIV, viral hepatitis and sexually transmitted infections, 2022–2030. https://iris.who.int/.
2. World Health, O. (2024). Global progress report on HIV, viral hepatitis, and sexually transmitted infections. https://www.who.int.
3. Garcia, M. R., Leslie, S. W., & Wray, A. A. (2024). Sexually Transmitted Infections. In StatPearls. http://www.ncbi.nlm.nih.gov/pubmed/26475947.
4. Joint United Nations Programme on HIV/AIDS (UNAIDS). (2024). Fact sheet 2024 - Latest global and regional HIV statistics on the status of the AIDS epidemic. https://www.unaids.org/en
5. Tudor, M. E., Al Aboud, A. M., Leslie, S. W., & Gossman, W. (2024). Syphilis. In StatPearls. http://www.ncbi.nlm.nih.gov/pubmed/25187322.
6. World Health Organization. (2023). Medicines for HIV, viral hepatitis and sexually transmitted infections in low- and middleincome countries: forecasts of global demand for 2022–2026. In Geneva: Joint United Nations Programme on HIV/AIDS; 2023. https://www.preventionweb.net/news/preliminary-report- february-6-2023-earthquakes-turkiye.
7. Kementerian Kesehatan, R. (2024). Profil Kesehatan 2023.
8. Kementerian Kesehatan, R. (2024). SIHA, Kemenkes RI.
9. Agustina, S. A., Zolekhah, D., & Barokah, L. (2022). Perbedaan Pengetahuan Calon Pengantin Laki-Laki dan Perempuan tentang Kesehatan Prakonsepsi. Jurnal Kesehatan Masyarakat, 6(3), 1890–1895.
10. Puskesmas Bantimurung. (2024). Profil Kesehatan 2024.
11. Riyanto, S., & Hatmawan, D. A. A. (2020). Metode Riset Penelitian Kuantitatif. Deepublish Publisher.
12. Sari, L. P. (2024). Pendidikan Kesehatan Tentang Penyakit Menular Seksual Melalui Audio-Visual Pada Wanita Usia Subur. 4(6). https://doi.org/10.59818/jpm.v4i6.901.
13. Elfiani, Saam, Z., & Delvis, Y. (2022). PERSEPSI CALON PENGANTIN TERHADAP TES KESEHATAN DAN PELAKSANAAN KONSELING PRA-NIKAH DI PUSKESMAS MEDANG KAMPAI KOTA DUMAI. 6(1), 101–112.
14. Oharume, I. M. (2020). Knowledge, sexual behaviours and risk perception of sexually transmitted infections among students of the polytechnic, Ibadan, Oyo State. African Health Sciences, 20(1), 39–44. https://doi.org/10.4314/ahs.v20i1.7

ISSN : 1907-8153 (Print)
e-ISSN : 2549-0567 (Online)

15. Nurqalbi, S., Irma, L., Bangun, P. A. Y. A., Sartini, Haslan, H., Haninggar, R. D., Rahmawati, V. E., Manoppo, M. S. L., Junamel, I., & Khobibah. (2023). Asuhan Kebidanan Pranikah dan Prakonsepsi. In Yayasan Kita Menulis.
16. Permenkes, 2021. (2021). PMK No. 21 Tahun 2021. Peraturan Menteri Kesehatan Republik Indonesia, 879, 2004–2006.
17. Permatasari, R., Suryani, L., Mukhoirotin, Sukaisi, Harahap, Z. N. A., Rahayu, M. A., Batubara, J. H. A., Supriadi, Y. T. R. F., & Argaheni, N. B. (2022). Asuhan Kebidanan Pranikah dan Pra Konsepsi. In Asuhan Kebidanan Pranikah dan Pra Konsepsi.
18. Wulandari, R. (2023). Promosi kesehatan tentang kesehatan reproduksi pada pasangan calon pengantin. Hayina, 2(2), 111–115. https://doi.org/10.31101/hayina.3035
19. Ramadhani, N., Rodafi, D., & Humaidi. (2023). Konsep Pemeriksaan Kesehatan Pra Nikah Bagi Calon Pengantin Dalam Perspektif Hukum Islam (Studi Kasus di KUA Kecamatan Lawang dan Puskesmas Lawang). Jurnal Ilmiah Hukum Keluarga Islam, 5(3), 316–326.
20. Dwiyanti, N. K. N., & Dewi, N. W. E. P. (2023). Penyuluhan tentang Skrining Pranikah pada Wanita Usia Subur di UPTD Puskesmas Kuta Selatan. Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM), 6(4), 1365–1375. https://doi.org/10.33024/jkpm.v6i4.9123.
21. Winarto, H., Habiburrahman, M., Kusuma, F., Nuryanto, K. H., Anggraeni, T. D., Utami, T. W., Putra, A. D., & Syaharutsa, D. M. (2023). Knowledge, Attitude, and Practice Towards Sexually Transmitted Infections Among Women of Reproductive Age in an Urban Community Health Centre in Indonesia. The Open Public Health Journal, 16(1), 1–15. https://doi.org/10.2174/18749445-v16-e230111-2022-182
22. Kemenkes RI. (2023). Petunjuk Teknis Manajemen Program Hepatitis B dan C.
23. Van Heuvel, Y., Schatz, S., Rosengarten, J. F., & Stitz, J. (2022). Infectious RNA: Human Immunodeficiency Virus (HIV) Biology, Therapeutic Intervention, and the Quest for a Vaccine. Toxins, 14(2), 1–26. https://doi.org/10.3390/toxins14020138
24. Huynh, K., & Kahwaji, C. I. (2025). HIV Testing. In StatPearls. http://www.ncbi.nlm.nih.gov/pubmed/31971928.
25. Winarto, H., Habiburrahman, M., Kusuma, F., Nuryanto, K. H., Anggraeni, T. D., Utami, T. W., Putra, A. D., & Syaharutsa, D. M. (2023). Knowledge, Attitude, and Practice Towards Sexually Transmitted Infections Among Women of Reproductive Age in an Urban Community Health Centre in Indonesia. The Open Public Health Journal, 16(1), 1–15. https://doi.org/10.2174/18749445-v16-e230111-2022-182