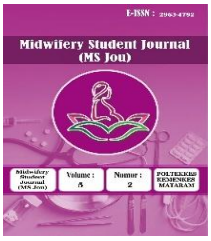
Midwifery Student Journal (MS Jou)
ISSN: 2693-4792 (Online)
Website: https://msj.poltekkes-mataram.id/index.php/home/index



Sociodemographic Characteristics, Risk Groups, and Sexually Transmitted Infections

Gusti Ayu Surya Ayustina[1]✉, Fitra Arsy Nur Cory'ah[2], Imtihanatun Najahah[3]
[1,2,3] Poltekkes Kemenkes Mataram, Indonesia

ABSTRACT

Sexually transmitted infections (STIs) remain a public health concern. This cross-sectional study examined associations of sociodemographic characteristics and recorded risk groups with STI diagnoses using 201 patient records from a community health center in Mataram, Indonesia, in 2025. Data were analyzed using chi-square tests. Men who have sex with men comprised the largest recorded risk group (161; 80.1%). The most frequent diagnoses were gonorrhea (95; 47.3%), syphilis (69; 34.3%), bacterial vaginosis (20; 10.0%), and HIV (17; 8.5%). Age, employment, sex, and marital status were associated with STI diagnosis categories, whereas education was not ($p = 0.348$). Risk-group classification was also associated with diagnosis ($p < 0.001$). These findings describe patterns among service users rather than population-level risks.
Keywords: sexually transmitted infections; risk groups; sociodemographic characteristics; diagnosis

✉Corresponding author : Gusti Ayu Surya Ayustina
IindawatiEmail Address : gustiayusuryaa@gmail.com
Received August 25, 2026, Accepted September 7, 2026, Published October 31, 2026

INTRODUCTION

Sexually transmitted infections (STIs) remain a challenge for reproductive and public health because they can cause complications and facilitate transmission. The original research background reports approximately 374 million new cases of four curable STIs globally in 2020 and 19,973 STI cases in Indonesia in 2022. Accessible testing, counseling, treatment, and referral are therefore important components of health services.

In 2024, Mataram City recorded 439 STI cases, including 247 cases reported by one community health center (approximately 56% of the city total). In contrast, the present analysis uses 201 STI service records from 2025 at the study health center. The 247 and 201 figures concern different reporting periods and should not be treated as competing counts for the same population or year. This study addresses the limited description of how registered patient characteristics and programmatic risk groups are distributed across diagnoses in the 2025 records.

Sociodemographic characteristics—including age, education, employment, sex, and marital status—may be related to differences in STI exposure, healthcare-seeking, and patterns of recorded diagnoses. The health-service register also groups patients into high-risk partners (pasangan RISTI), female sex workers (FSWs), men who have sex with men (MSM), and pregnant women. These are programmatic categories, some defined by sex or pregnancy; therefore, associations with sex should be interpreted cautiously.

Describing the distribution of STI diagnoses within routine-service patient groups may help the health center identify priorities for counseling, testing, and referral. Existing local reports emphasize case counts but provide less detail on how diagnoses vary by sociodemographic characteristics and service-defined risk groups. The objective of this study was to examine associations between recorded patient characteristics, service-defined risk-group categories, and

STI diagnosis categories in one community health center in Mataram. The clinic-based cross-sectional design does not estimate community prevalence or identify causal risk factors.

METHODS

This observational cross-sectional analysis was conducted between January and June 2026 using secondary records of STI services delivered during 2025 at one community health center in Mataram City. The population of interest consisted of patients recorded in the STI register or related medical records during the specified 2025 period. All 201 records included in the prepared study dataset were analyzed (total sampling). More detailed eligibility rules and whether repeat visits were deduplicated were not documented, so 201 is treated as the number of records rather than a confirmed number of unique patients.

The extracted variables were age, education, employment, sex, marital status, registered STI diagnosis (gonorrhea, syphilis, HIV, or bacterial vaginosis), and the health-service risk-group label: high-risk partner (pasangan RISTI), female sex worker (FSW), man who has sex with men (MSM), or pregnant woman. The study uses the categories as recorded in the register; it could not verify from aggregate data whether the labels were mutually exclusive or how overlap was handled. Records were entered, checked, and cleaned before descriptive summaries and reported bivariate chi-square comparisons using a nominal significance threshold of 0.05. Patient identifying information was kept confidential.

The available tabulations include several small or zero cells. Expected frequencies, degrees of freedom, and the original output needed to determine whether Pearson chi-square assumptions were satisfied were not supplied. The p-values are therefore presented as reported; an exact alternative should be used by the authors for comparisons that violate chi-square assumptions. No odds ratios or causal associations are inferred from these descriptive tests.

RESULTS

The analysis contained 201 STI service records. The original descriptive narrative indicates that a majority of records concerned patients aged 16–24 years (115; 57.2%), patients with secondary education (151; 75.1%), and those recorded as unmarried. Because some participant totals reported in the narrative do not match all contingency-table cells, the category counts below have been retained as recorded without silently recalculating or altering the original data. The relevant register totals require author verification.

Table 1. Distribution of recorded STI risk-group categories (n = 201)

Recorded risk group	n	%
High-risk partners (RISTI)	8	4.0
Female sex workers (FSWs)	24	11.9
Men who have sex with men (MSM)	161	80.1
Pregnant women	8	4.0
Total	201	100.0

Table 2. Distribution of STI diagnoses (n = 201)

Recorded diagnosis	n	%
Gonorrhea	95	47.3
Syphilis	69	34.3
HIV	17	8.5
Bacterial vaginosis	20	10.0
Total	201	100.0

Midwifery Student Journal (MS Jou)
ISSN: 2693-4792 (Online)
Website: https://msj.poltekkes-mataram.id/index.php/home/index

Gonorrhea was the most frequently recorded diagnosis, followed by syphilis, bacterial vaginosis, and HIV. MSM accounted for the largest recorded service risk group. These percentages describe the service sample, not prevalence in the wider community.

Table 3. Associations of sociodemographic characteristics with risk-group classification

Characteristic	Reported p-value	Interpretation
Age	<0.001	Statistically significant
Education	0.019	Statistically significant
Employment	0.197	Not statistically significant
Sex	<0.001	Statistically significant
Marital status	<0.001	Statistically significant

Table 4. Associations of sociodemographic characteristics with STI diagnosis

Characteristic	Reported p-value	Interpretation
Age	0.013	Statistically significant
Education	0.348	Not statistically significant
Employment	<0.001	Statistically significant
Sex	<0.001	Statistically significant
Marital status	<0.001	Statistically significant
Risk-group category	<0.001	Statistically significant

Table 5. Risk-group classification by STI diagnosis: source counts

Risk group	Gonorrhea	Syphilis	HIV	Bacterial vaginosis
High-risk partners	1	3	0	4
FSWs	4	4	1	15
MSM	89	56	16	0
Pregnant women	1	6	0	1
Total	95	69	17	20

Among MSM, the source tabulation recorded 89 cases of gonorrhea, 56 of syphilis, and 16 of HIV. Among FSWs, bacterial vaginosis was the most frequent recorded diagnosis (15). Syphilis was the most frequent diagnosis among pregnant women (6). The source reports a significant association between risk-group classification and diagnosis ($p < 0.001$).

DISCUSSION

The predominance of young adults aged 16–24 years resembles observations that STI service use and sexual-health needs concentrate among adolescents and young adults. Young age may be accompanied by changing social relationships and varying access to reliable sexual-health information (Hanifah & C. K., 2022; WHO, 2025). Nonetheless, high clinic counts are influenced by testing and referral patterns, and cannot demonstrate higher population-level incidence without a suitable denominator.

Secondary education was the most common educational category. Education may facilitate comprehension of STI prevention messages, but schooling alone does not guarantee consistent protective behavior. The source notes that social environment, sexual-health literacy, and access to care also shape health decisions (Sari & Susanto, 2019; Notoatmodjo, 2018). Education was associated with registered risk-group category ($p = 0.019$) but not with the type of STI diagnosis ($p = 0.348$).

Most records were assigned to the MSM category. This may reflect the composition of patients targeted by local outreach and access to STI services rather than the population distribution of sexual practices. Unprotected receptive anal intercourse can carry elevated biological

transmission risk for some infections; however, risk is determined by specific exposures and preventive practices, not identity alone. Supportive, non-stigmatizing testing and counseling are therefore important.

Women designated as sex workers constituted another recorded group, among whom the largest diagnosis count was bacterial vaginosis. Bacterial vaginosis reflects alteration of vaginal microbial flora and is not simply interchangeable with a classical sexually transmitted infection. The inclusion of this diagnosis in the local STI register should be explicitly described when interpreting its distribution (Indonesian Ministry of Health, 2022).

Syphilis was the most frequently reported diagnosis in the small group of pregnant women. Antenatal screening, prompt treatment, and linkage to prevention of mother-to-child transmission services are particularly relevant for syphilis and HIV (Indonesian Ministry of Health, 2017). Because the subgroup contained only eight records, the findings should not be generalized to all pregnant women in the area.

Gonorrhea was the most frequently recorded diagnosis overall. Its symptoms may encourage early care seeking, while syphilis and HIV may remain asymptomatic for long periods (Sari, 2016; Ummi & Ellista, 2020). Such clinical and service factors could influence the observed diagnostic mix. Differences by sex also partially reflect the presence of bacterial vaginosis in female patients and programmatic categories that are sex-specific.

Age, employment, sex, and marital status were associated with diagnosis category, whereas educational level was not. These are unadjusted chi-square associations and should not be interpreted as independent predictors. Sex was also significantly associated with risk-group categories; because MSM, FSW, and pregnant-woman groups are partly defined by sex, this finding is largely structural. Sparse cells in several cross-tabulations also make assumptions of the chi-square test important to verify.

The analysis has limitations inherent to its single-center, register-based cross-sectional design: incomplete information on behavioral exposures, potential inconsistencies across recorded classifications, lack of adjusted analyses, and uncertainty concerning the representativeness of service users. Some source-table counts do not exactly match narrative totals; the underlying dataset should be reconciled before publication. These findings remain useful as a description of the service caseload and as a basis for strengthening local prevention and testing.

In the original dataset, the largest age category was 16–24 years. The detailed source tabulation gives 97 patients in this age group classified as MSM, 16 as FSWs, and two as pregnant women. In the 25–49-year group, the corresponding counts were 63 MSM, six FSWs, eight high-risk partners, and six pregnant women. Three patients were older than 50 years. These distributions help explain the highly significant association between age and recorded risk-group classification; however, they also reflect the composition of the selected clinical sample. A higher count among young adults does not establish an age-specific incidence without the number of all persons at risk in each age group.

With respect to education, the source table lists 151 people with secondary education across risk categories, compared with 15 with basic education and 35 with higher education. The MSM category included 119 participants with secondary education, compared with ten who had basic education and 32 who had higher education. This observed distribution should not be interpreted as evidence that secondary education independently increases STI risk. Formal schooling may affect the receipt and comprehension of prevention messages, whereas individual behavior, healthcare access, social networks, and prior testing may be more directly linked to a diagnosis.

Employment categories presented a different pattern. The original narrative reports 143 unemployed patients, while one of its contingency tables appears to sum to 142 across categories. The source also records 58 employed participants. This discrepancy is small numerically but

important for a journal submission, because readers need to know whether analyses were based on 200 or 201 complete cases. The present English manuscript retains the published association p-value (0.197) for employment and risk-group classification, pending confirmation of the original cross-tabulation. Likewise, the difference between a significant employment association with the diagnosis category and a nonsignificant association with risk group may arise because the two outcome classifications capture different phenomena.

Of the total recorded diagnoses, the source reports gonorrhea in 95 patients and syphilis in 69, together accounting for more than four-fifths of the sample. Gonorrhea can present with genital symptoms, particularly among some male patients, whereas syphilis has primary, secondary, and latent stages and may go undetected when symptoms are absent. HIV can also remain asymptomatic for a prolonged period. These clinical characteristics could contribute to differences in when patients attend care, undergo testing, and receive diagnoses. The current secondary dataset does not include symptom duration, time since exposure, or treatment history; therefore, such mechanisms remain explanatory possibilities rather than demonstrated findings.

Among the recorded male patients, the source tabulation identifies 92 with gonorrhea, 61 with syphilis, and 17 with HIV. Among women, the distribution includes three with gonorrhea, eight with syphilis, and approximately 19 to 20 with bacterial vaginosis; the exact bacterial-vaginosis count by sex is inconsistent across source cells. These differences may partly reflect the clinical presentation of each condition and the services offered to male and female clients. Any interpretation must recognize that some disease categories, particularly bacterial vaginosis, are anatomically specific, while some programmatic risk categories are defined using sex.

The married and unmarried groups also differed in the distribution of recorded diagnoses. Source Table 2 lists 92 gonorrhea diagnoses and 60 syphilis diagnoses among unmarried patients, compared with three and nine respectively among married patients. The relationship may be confounded by age, type of service accessed, network characteristics, and other variables not included in these simple cross-tabulations. It is not appropriate to assume that marital status itself determines whether sexual contact is safe. Prevention messages should be framed around testing access, correct condom use, timely treatment, partner notification where appropriate, and reduction of stigma rather than marital labels.

The risk-group–diagnosis table highlights further service-specific patterns. Gonorrhea was most frequently registered for MSM, whereas bacterial vaginosis was concentrated in the FSW group. Syphilis was the most common diagnosis in the small subgroup of pregnant women, emphasizing the value of pregnancy-related syphilis screening and timely referral. Risk-group classifications in the register may have been used for outreach or service organization, and may not be mutually exclusive in a biological sense. The authors should clarify whether a patient could satisfy multiple categories and how primary classification was determined.

The reported chi-square results provide an initial description of associations among clinic register categories, but the assumptions of Pearson chi-square must be checked for each comparison. Multiple cross-tabulations contain zero cells or very small groups, especially the eight pregnant-woman records and eight high-risk-partner records. Where expected counts are insufficient, the authors should confirm the result using an appropriate exact test and report the test method, degrees of freedom when relevant, and effect size. As the original test outputs were unavailable for reanalysis, the reported p-values cannot be independently verified and should not be interpreted as estimates of risk or causality.

For clinical practice, the distribution of recorded cases may help a community health center consider how to allocate STI testing supplies and offer timely follow-up for gonorrhea, syphilis, and HIV. Services for MSM, sex workers, pregnant women, and other clients should be respectful and confidential. Antenatal care offers an additional point for HIV and syphilis testing and

management. Evaluation of these services would benefit from data on completeness of testing, treatment completion, partner services, and repeat testing, rather than case frequencies alone.

Finally, the source manuscript is based on routine patient records. Such data may be affected by incomplete recording, differences in clinician diagnostic coding, selective testing, and repeated visits by the same patient. Without clarification of whether the 201 observations represent unique individuals, it is difficult to interpret the number as an independent patient sample. A future multicenter analysis with standardized case definitions, deduplicated records, and appropriate denominators could better examine patterns in clinical diagnosis and prevention needs.

Programmatic classification merits special attention in the analysis. The four categories used here combine behavioral categories, partner-related categories, and pregnancy status. These categories do not necessarily represent a single underlying construct of risk. Pregnancy is a clinical state, whereas MSM refers to a sexual-behavior grouping and FSW refers to occupational or transactional exposure; as a result, strong statistical associations involving these categories can reflect the way the register was designed. Clarifying the classification rules, how missing categories were handled, and whether each patient had one mutually exclusive designation would substantially improve interpretation. Accordingly, the tables should not be interpreted as proving that these categories capture independent or equivalent STI risk exposures.

Important descriptive proportions should also be presented with their denominator. For instance, 89 MSM records with gonorrhea represent 44.3% of all 201 cases, not 44.3% of MSM records. When describing within-group diagnostic patterns, the denominator would instead be 161 for MSM. Similar care is needed for pregnant women, whose small subgroup size can produce apparently large percentage differences from a change of only one case. This distinction is important in clinical reports, where percentages may otherwise be misread as risk or incidence estimates.

CONCLUSION

Among 201 clinic STI service records from 2025, MSM was the largest documented programmatic risk group and gonorrhea was the most frequent diagnosis. Recorded patient characteristics and risk-group classifications showed reported associations with diagnostic categories, although education was not associated with diagnosis type. These findings describe patterns among patients accessing one service rather than population-level infection risk. Verification of register totals and tests involving sparse cells is required before drawing stronger conclusions.

ACKNOWLEDGMENTS

The authors thank the participating health center, supervisors, and everyone who supported data access and the conduct of the study.

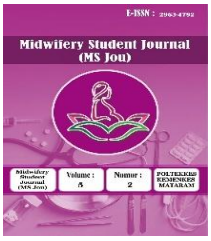
REFERENCES

Aulia Nur Ihsani, & Wirniaty, D. (2024). Hubungan tingkat pengetahuan dengan sikap terhadap pencegahan penyakit infeksi menular seksual pada mahasiswa tingkat pertama Fakultas Kedokteran. Jurnal Kesehatan Republik Indonesia, 1.

Ayu, I. (2019). Memahami kesehatan reproduksi wanita. Jakarta: EGC.

Dewi, K. S. (2012). Gambaran makna keluarga ditinjau dari status dalam keluarga, usia, tingkat pendidikan, dan jenis pekerjaan. Jurnal Psikologi, 10.

Djohan, H. D., Sutriswanto, S., Nurhayati, E., Ratika, M., & Salim, M. (2024). Hubungan seks bebas dengan kejadian sifilis di wilayah kerja Puskesmas Kom Yos Sudarso Kota Pontianak. Jurnal Laboratorium Khatulistiwa, 7(2), 133–138. https://doi.org/10.30602/jlk.v7i2.1347



Efendi, A., S. E., I. A., & P. W., G. (2022). Hubungan antara jenis kelamin dengan angka kejadian kondiloma akuminata di Poliklinik Kulit dan Kelamin RSUD Dr. H. Abdoel Moeloek Bandar Lampung. MAHESA: Malahayati Health Student Journal, 2.

Hanifah, N., & C. K. (2022). Perilaku seksual pranikah pada siswa SLTP pengungsi eks Timor Timur di Kecamatan Kupang. Jurnal Promosi Kesehatan Indonesia, 7.

Johnston, C. (2022). Diagnosis and management of genital herpes: Key questions and review of the evidence for the 2021 Centers for Disease Control and Prevention sexually transmitted infections treatment guidelines. Clinical Infectious Diseases, 74.

Kementerian Kesehatan Republik Indonesia. (2016). Pedoman nasional penanganan infeksi menular seksual. Jakarta: Kementerian Kesehatan Republik Indonesia.

Kementerian Kesehatan Republik Indonesia. (2017). Peraturan Menteri Kesehatan Nomor 52 Tahun 2017 tentang eliminasi penularan HIV, sifilis, dan hepatitis B dari ibu ke anak.

Notoatmodjo, S. (2018). Metodologi penelitian kuantitatif, kualitatif dan R&D. Jakarta: Rineka Cipta.

Permenkes RI. (2022). Penanggulangan HIV, AIDS, dan Infeksi Menular Seksual. Jakarta: Kementerian Kesehatan Republik Indonesia.

Rosita, Y., Herawati, Y., Kartika, I., Iriani, O. S., Triwidiyantari, D., & Sari, D. P. (2023). Faktor penentu infeksi menular seksual dan HIV/AIDS di Puskesmas Ibrahim Adjie Kota Bandung tahun 2022. Jurnal Medika Nusantara.

Sari, I. S., & Susanto, I. (2019). Hubungan pendidikan dan status kawin dengan infeksi menular seksual pada wanita usia subur di layanan klinik IMS. Kes Mas, 13(2).

Sugiyono. (2020). Metodologi penelitian kuantitatif, kualitatif dan R&D. Alfabeta.

Syahrianti, S., et al. (2023). Penyakit menular seksual dan HIV-AIDS. Eureka Media Aksara.

Ummi, R., & Ellista, S. E. Y. (2020). Terapi sifilis terkini. Cermin Dunia Kedokteran, 47(11), 647–658.

World Health Organization. (2025). Syphilis fact sheet. WHO.