Literature Review: Risk Factors of Sexually Transmitted Infections among Commercial Sex Workers

Yunita Rusfiani[1], Triana[2], Cristiani Toding Bua[3], Ayu Wulandari[4], Juliyanti[5], Luvi Dian Afriyani[6]

[1]Bachelor of Midwifery Program, Universitas Ngudi Waluyo, yunitarusfiani29@gmail.com
[2]Bachelor of Midwifery Program, Universitas Ngudi Waluyo, ana.umar90@gmail.com
[3]Bachelor of Midwifery Program, Universitas Ngudi Waluyo, yopivale45@gmail.com
[4]Bachelor of Midwifery Program, Universitas Ngudi Waluyo, polindesmodang@gmail.com
[5]Bachelor of Midwifery Program, Universitas Ngudi Waluyo, juliyantiamir@gmail.com
[6]Bachelor of Midwifery Program, Universitas Ngudi Waluyo, luviqanaiz@gmail.com
Email Correspondence: yunitarusfiani29@gmail.com

Article Info

Article History
Submitted, 2026-04-12
Accepted, 2026-05-19
Published, 2026-06-30

Keywords: Risk factors, sexually transmitted infections, commercial sex workers

Abstract

Sexually transmitted infections (STIs) remain a major public health concern, particularly among commercial sex workers who experience repeated sexual exposure, multiple sexual partners, and unequal power in negotiating safe sex practices. This literature review aimed to identify risk factors associated with STI incidence among commercial sex workers, with a specific focus on condom use, duration of sex work, and number of clients. This study used a literature review method by collecting, identifying, and evaluating previous research articles. Articles were searched through electronic databases, including Google Scholar, PubMed, ScienceDirect, and ProQuest. The search was limited to studies published between 2021 and 2025 using the keywords "risk factors," "commercial sex workers," and "sexually transmitted infections." Ten research articles that met the inclusion criteria were reviewed and analyzed. The findings showed that condom use was the most consistent factor associated with STI incidence. Most studies reported a significant relationship between inconsistent or unsafe condom use and higher STI risk, although one study found no significant association with chlamydia infection. Duration of sex work was also frequently associated with STI incidence, suggesting that longer involvement in sex work may increase cumulative exposure to sexual risks, condom failure, and reinfection. However, this factor showed more varied findings across studies, indicating that its effect may depend on other conditions such as access to screening, condom negotiation ability, and working environment. The number of clients was another important risk indicator, as higher client volume increased the frequency of sexual exposure and the possibility of contact with untreated infections. Overall, this review indicates that STI incidence among commercial sex workers is influenced by interconnected behavioral and occupational factors rather than a single determinant. Condom use and number of clients appeared to be the most consistent risk indicators, while duration of sex work showed more inconsistent results. STI prevention programs should therefore prioritize consistent condom use, free condom access, routine STI screening, targeted outreach for workers with high client volume, and supportive health services that reduce stigma and improve early treatment.

Introduction

Sexually transmitted infections (STIs) remain a major public health problem because they affect sexual and reproductive health and often occur without clear symptoms. The World Health Organization reported that more than one million curable STIs are acquired every day among people aged 15 to 49 years, with an estimated 374 million new infections in 2020. This burden becomes more serious among commercial sex workers because their work involves repeated sexual contact, partner change, and unequal power in condom negotiation. Recent studies also show high STI prevalence in this population. Wariso et al. found that 23.64% of

Corresponding author:
Yunita Rusfiani
Yunitarusfiani29@gmail.com

female sex workers in Ethiopia had at least one STI, while Bitty-Anderson et al. reported that 42.7% of female sex workers in Togo had self-reported STI symptoms in the previous 12 months. These findings show that STI prevention among commercial sex workers remains urgent and needs a focused review on the most relevant risk factors (WHO, 2025).

Previous reviews have discussed STI and HIV prevention among female sex workers, but many of them focused on broad prevention issues rather than examining specific occupational and behavioral factors together. Omidi et al. reviewed barriers to condom use and found that violence, sexual abuse, previous STI history, HIV risk perception, drug use, and low condom-use self-efficacy were associated with not using condoms. Barriers to condom negotiation among female sex workers in the United States and United States-Mexico border cities, but the review mainly emphasized alcohol use, drug use, venue stability, violence, trust in regular clients, and power imbalance. These reviews are useful, yet they do not clearly synthesize how condom use, duration of sex work, and number of clients relate to STI incidence as a combined focus. Therefore, the present literature review is needed to fill that gap and provide a more specific evidence base for STI prevention programs among commercial sex workers (Omidi et al., 2023).

Condom use is one of the most important factors associated with STI prevention among commercial sex workers. From an epidemiological perspective, condoms reduce exposure to infectious genital fluids and lower the probability of pathogen transmission during vaginal, anal, and oral sex. However, the protective effect depends on correct and consistent use. Decker et al. (2020) found that inconsistent condom use with clients was associated with client condom coercion, with AOR = 1.76 and 95% CI 1.03 to 3.02, and client intoxication during sex, with AOR = 2.25 and 95% CI 1.13 to 4.45. In Ethiopia, Rameto et al. reported that inconsistent condom use among female sex workers was 17.1%, and it increased among those with sexual violence history, drug use, anal sex, limited condom access, and longer sex-selling experience. Similarly, Kampman et al. found that clients of female sex workers who did not use a condom during the last sexual contact had higher STI positivity, with OR = 2.2 and 95% CI 1.6 to 2.9 (Decker et al., 2020).

Duration of sex work is another important factor because a longer working period can increase cumulative exposure to clients, condom failure, sexual violence, and repeated STI reinfection. Wariso et al. (2023) found that female sex workers in Ethiopia who had sold sex for 5 to 10 years had higher odds of STI, with AOR = 1.30 and 95% CI 1.10 to 1.55, while those who had worked for more than 11 years also had increased odds, with AOR = 1.21 and 95% CI 1.03 to 1.43. A ScienceDirect study by Anderegg et al. also showed that the duration of sex work among female sex workers in South Africa increased over time, with the predicted mean duration rising from 2.7 years in 1996 to 7.4 years in 2019. However, not all studies found the same pattern. In Togo, Bitty-Anderson et al. found that working for more than three years was not significantly associated with self-reported STI symptoms, with $p = 0.70$. This inconsistency strengthens the need for a literature review that compares evidence across different settings (Wariso et al., 2023).

The number of clients is also closely related to STI incidence because a higher client volume increases the frequency of sexual exposure and the possibility of unprotected sex, condom breakage, or contact with untreated infections. In Togo, Bitty-Anderson et al. found that female sex workers who had 15 or more clients in the previous seven days had higher odds of self-reported STI symptoms, with aOR = 2.15 and $p = 0.02$. In Baltimore, a study published in Sexually Transmitted Diseases reported that confirmed STI prevalence among female sex workers was 28%, including 15% chlamydia and 18% gonorrhea, and STI positivity was significantly associated with having six or more clients in the past week, with $p = 0.01$. Evidence from clients also supports this pattern. Kampman et al. found that male clients of female sex workers with 20 or more sex partners in the last six months were more likely to be STI positive, with OR = 2.9 and 95% CI 1.9 to 4.4 (Bitty-Anderson et al., 2022).

The relationship between condom use, duration of sex work, number of clients, and STI incidence does not occur in isolation. Social and structural factors can strengthen or weaken these relationships. For example, violence can reduce a sex worker's ability to negotiate condom use, while stigma and limited access to health services can delay STI testing and treatment. Barrow et al. found that lifetime STI occurrence among female sex workers in The Gambia reached 71.8%, and contact violence was strongly associated with STI occurrence, with aOR = 7.55 and 95% CI 3.05 to 19.43 in conventional logistic regression. In Bangladesh, Alam et al. found that 88.7% of female sex workers reported STI symptoms in the last six months, and qualitative findings identified stigma, poor STI or HIV knowledge, and low perceived risk as important reasons behind STI symptoms and care-seeking barriers. These findings show that behavioral risk factors need to be interpreted together with social vulnerability (Barrow et al., 2026). Top of Form.

Based on the evidence, this literature review is important because previous studies and reviews have not sufficiently integrated the three specific variables of condom use, duration of sex work, and number of clients as focused predictors of STI incidence among commercial sex

workers. This focus is necessary because these variables are practical, measurable, and directly relevant to prevention programs. A review that synthesizes these factors can help identify which risks are most consistent across settings and which findings remain inconsistent. The results can guide targeted interventions, such as strengthening condom negotiation skills, improving access to condoms, increasing routine STI screening, prioritizing outreach for workers with high client volume, and designing prevention strategies for those with longer exposure in sex work. Therefore, this review is expected to provide a clearer academic basis for reducing STI incidence among commercial sex workers through evidence-based and context-sensitive interventions.Bottom of Form.

Methods

This study used a literature review method, namely a systematic and clear review of previous studies by collecting, identifying, and evaluating existing research data. The purpose of this literature review was to identify risk factors associated with the incidence of sexually transmitted infections (STIs) among commercial sex workers. A systematic search was conducted through electronic databases, including Google Scholar, PubMed, ScienceDirect, and ProQuest. The search was limited to articles published from 2021 to 2025. The keywords used in the search were "risk factors," "commercial sex workers," and "sexually transmitted infections." The inclusion criteria in this literature review were: 1) articles focusing on risk factors associated with sexually transmitted infections among commercial sex workers, 2) full-text articles published between 2021 and 2025, 3) articles written in Indonesian or English, and 4) research articles. The exclusion criteria were: 1) articles in the form of undergraduate theses or theses, 2) articles that could not be accessed freely, and 3) literature review articles.

Results and Discussion

A literature review was conducted on 10 selected articles. The publications ranged from 2021 to 2025. The results of the journal analysis are presented in Table 1 as follows:

Table 1. Results of Journal Analysis

No	Research	Method	Results
1.	Determinants of safe sexual behavior of female sex workers in Tehran: the woman, her network, and the sexual partner (Shushtari et al., 2021)	The design used was a cross-sectional ego-centric network survey in Iran. The study population was commercial sex workers, with a sample size of 170 respondents (egos) including data from 615 sexual partners (alters) in their network. The sampling technique used was a combination of snowball sampling (following the principle of respondent-driven sampling up to five waves), convenience sampling through health service centers (DIC), and purposeful sampling. Analysis used multiple regression.	1. There is a relationship between condom use and sexually transmitted infections in sex workers (p=0,0001). 2. There is a relationship between length of service and sexually transmitted infections in sex workers (p=0,001). 3. There is a relationship between the number of clients and sexually transmitted infections in sex workers (p=0,001).
2.	Sexual risk and STI testing behaviour among Dutch female and male self-employed sex workers; a cross-sectional study using an Internet based survey (Kampman et al., 2022)	This study is a quantitative study with a cross-sectional design in Netherland. The population in this study were sex workers. The sample in this study was selected using a purposive sampling technique. The sample size used in this study was 316. Data were analyzed using the chi-square test.	1. There is a relationship between the number of clients and sexually transmitted infections in sex workers (p=0.016). 2. There is a relationship between length of service and sexually transmitted infections in sex workers (p=0.027).
3.	Prevalence and predictors of HIV and sexually transmitted infections among vulnerable women engaged in sex work:Findings from the Kyaterekera Project in Southern Uganda (Kiyingi et al., 2022)	This quantitative study used a longitudinal randomized control trial (RCT) design In Ethiopia. The population was women engaged in sex work (WESW) in Southwest Uganda, with a sample size of 542. The sampling technique used was purposive sampling. Multiple logistic regression was used for analysis.	1. There is a relationship between condom use and sexually transmitted infections in sex workers (p=0.03). 2. There is a relationship between length of service and sexually transmitted infections in sex workers (p=0.1). 3. There is a relationship

			between the number of clients and sexually transmitted infections in sex workers (p=0.01).
4.	Determinants of sexually transmitted infections among female sex workers in Ethiopia: a count regression model approach (Wariso et al., 2023)	The research method used was an analytical survey with a cross-sectional approach. The population used in this study was commercial sex workers (CSWs). The sampling technique for this study was random sampling of 6,085 respondents. Data analysis used the odds ratio.	1. There is a relationship between condom use and sexually transmitted infections in sex workers (OR=1.32). 2. There is a relationship between length of employment and sexually transmitted infections in sex workers (OR=1.30).
5.	Determinants of Sexually Transmitted Infections and HIV/AIDS at Ibrahim Adjie Community Health Center, Bandung City, 2022 (Rosita et al., 2023)	This research is a quantitative study with a cross-sectional design and purposive sampling technique. The sample size used in this study was 404. Data were analyzed using the product-moment correlation test.	There is a relationship between condom use and sexually transmitted infections (p=0.008)
6	Social and structural determinants associated with the prevalence of sexually transmitted infections among female commercial sex workers in Dhaka City, Bangladesh (Kawser et al., 2024)	Jenis penelitian metode *survei analitik* dengan pendekatan *cross sectional*. Populasi yang digunakan dalam penelitian ini adalah pekerja seks komersial. Teknik pengambilan sampel untuk penelitian ini adalah *random sampling* sebanyak 495 responden. Analisa data menggunakan regresi logistic berganda	1. Ada hubungan penggunaan kondom dengan infeksi menular seksual pada PSK (p<0,05) 2. Ada hubungan lama bekerja dengan infeksi menular seksual pada PSK (p<0,05)
7	Patterns of inconsistent condom use and risky sexual behaviors among female sex workers in Mozambique (Muleia et al., 2024)	This research used an analytical survey method with a cross-sectional approach. The population used in this study was commercial sex workers. The sampling technique for this study was random sampling of 495 respondents. Data analysis used multiple logistic regression.	1. There is a relationship between condom use and sexually transmitted infections in sex workers (p=0.029). 2. There is a relationship between length of service and sexually transmitted infections in sex workers (p<0.05). 3. There is a relationship between the number of clients and sexually transmitted infections in sex workers (p=0.047).
8	Factors Associated with Chlamydia Infection among Female Sex Workers in West Jakarta: Analysis of the 2018-2019 Integrated Biological and Behavioral Survey (Karamy & Sudaryo, 2024)	This study is a quantitative study with a cross-sectional design. The population in this study were sex workers. The sample in this study was selected using a purposive sampling technique. The sample size used in this study was 283. Data were analyzed using the chi-square test.	1. There is no relationship between condom use and sexually transmitted infections in sex workers (p=0.108). 2. There is a relationship between length of service and sexually transmitted infections in sex workers (p=0.038). 3. There is a relationship between the number of clients and sexually transmitted infections in sex workers (p=0.001).
9	Risk Factors of Syphilis Infection among Female Sex Workers (FSW) in Indonesia 2018/2019: A Cross Sectional Study	This study is a quantitative study with a cross-sectional design. The population in this study were sex workers. The sample in this study was selected using a purposive sampling technique. The sample size used in this study was 5,647. Data were analyzed using simple linear regression.	1. There is a relationship between condom use and sexually transmitted infections in sex workers (p=0.014). 2. There is no relationship between length of service and sexually transmitted infections in sex workers

	(Tampubolon & Herdayati, 2024)		(p=0.272). 3. There is no relationship between the number of clients and sexually transmitted infections in sex workers (p=0.146).
10	Sexually Transmitted Diseases Determinant among Online Sex Workers in Indonesia (Ginting et al., 2025)	This research is a quantitative, cross-sectional study conducted online. The population in this study is online sex workers; their population size is unknown. The sample in this study was selected using a snowball sampling technique. The sample size used in this study was 593. Data were analyzed using the chi-square test.	1. There is a relationship between condom use and sexually transmitted infections in sex workers (p=0.000). 2. There is a relationship between length of service and sexually transmitted infections in sex workers (p=0.000). 3. There is a relationship between the number of clients and sexually transmitted infections in sex workers (p=0.000).

Based on the analysis of 10 articles conducted by researchers, the following risk factors were identified: Based on results analysis of 10 articles conducted by researchers obtained results factor associated risks with STI incidence in workers sex that is:

Use Condom

The reviewed studies show that condom use is the most consistent behavioral factor associated with STI incidence among commercial sex workers. Shushtari et al. (2021) found a significant relationship between condom use and STI incidence with $p = 0.0001$. Kiyingi et al. (2022) also reported a significant association with $p = 0.03$. Similar findings appeared in Rosita et al. (2023) with $p = 0.008$, Kawser et al. (2024) with $p < 0.05$, Muleia et al. (2024) with $p = 0.029$, Tampubolon and Herdayati (2024) with $p = 0.014$, and Ginting et al. (2025) with $p < 0.001$. Wariso et al. (2023) strengthened this pattern by reporting an odds ratio of 1.32, which means that unsafe or inconsistent condom-related behavior increased STI risk. These findings indicate that condom use is not only a preventive behavior, but also a key indicator of sexual risk exposure among commercial sex workers.

However, the evidence is not fully uniform. Karamy and Sudaryo (2024) found no significant relationship between condom use and chlamydia infection among female sex workers in West Jakarta with $p = 0.108$. This difference may occur because STI outcomes were measured more specifically as chlamydia infection, while other studies used broader STI outcomes. Another possible explanation is measurement bias, because condom use is often self-reported and may be affected by recall bias or social desirability bias. The studies also used different analytical methods, including chi-square tests, correlation tests, regression models, and odds ratios. Therefore, the overall conclusion is that condom use remains a strong and practical prevention factor, but its association with STI incidence may vary depending on the type of STI measured, the quality of behavioral data, and the ability of each study to control confounding factors such as client pressure, violence, access to condoms, and duration of sex work.

Duration of Sex Work

Duration of sex work was also frequently associated with STI incidence, but the findings were less consistent than condom use. Shushtari et al. (2021) found a significant relationship between duration of sex work and STI incidence with $p = 0.001$. Kampman et al. (2022) reported a similar association with $p = 0.027$, while Wariso et al. (2023) showed that duration of employment increased STI risk with OR = 1.30. Kawser et al. (2024), Muleia et al. (2024), Karamy and Sudaryo (2024), and Ginting et al. (2025) also found significant relationships, with $p < 0.05$, $p < 0.05$, $p = 0.038$, and $p < 0.001$ respectively. These findings suggest that longer involvement in sex work can increase cumulative exposure to sexual risk, repeated contact with clients, condom failure, and reinfection.

Despite this general pattern, two studies reported different results. Kiyingi et al. (2022) showed $p = 0.10$, which does not meet the usual statistical significance level of 0.05. Tampubolon and Herdayati (2024) also found no significant relationship between duration of sex work and syphilis infection with $p = 0.272$. These differences show that duration of sex work alone may not directly determine STI incidence. Its effect may depend on other conditions, such as consistency of condom use, number of clients, access to STI screening, treatment history, and type of infection measured. A long duration of work may not increase STI risk when sex workers have good condom negotiation skills and regular access to health

services. In contrast, even a short duration of work may increase risk when workers face high client volume, poor knowledge, or limited protection. Therefore, duration of sex work should be interpreted as an exposure indicator rather than a single causal factor.

Number of Clients

The number of clients showed a strong association with STI incidence in several studies because it reflects the frequency of sexual exposure. Shushtari et al. (2021) found a significant relationship between number of clients and STI incidence with $p = 0.001$. Kampman et al. (2022) also reported a significant association with $p = 0.016$. Kiyingi et al. (2022) found $p = 0.01$, Muleia et al. (2024) found $p = 0.047$, Karamy and Sudaryo (2024) found $p = 0.001$, and Ginting et al. (2025) found $p < 0.001$. These results show that a higher number of clients increases the opportunity for exposure to untreated infections, unprotected sex, condom breakage, and repeated sexual contact. Compared with duration of sex work, number of clients may represent a more immediate measure of current exposure because it directly reflects the intensity of sexual activity within a certain period.

Nevertheless, the relationship between number of clients and STI incidence was not significant in Tampubolon and Herdayati (2024), which reported $p = 0.146$ for syphilis infection. This finding suggests that client volume may not always predict STI incidence when other factors are more dominant, such as condom consistency, previous treatment, partner type, or biological characteristics of the infection. Another weakness across the reviewed studies is that the measurement of number of clients was not always standardized. Some studies may assess clients per day, per week, or within a longer recall period, which can produce different results. In addition, most studies used a cross-sectional design, so they could identify association but could not confirm whether high client volume occurred before STI infection. Therefore, the evidence supports number of clients as an important risk marker, but stronger longitudinal studies are needed to clarify the temporal relationship between client volume and STI incidence.

Overall, the reviewed evidence indicates that condom use, duration of sex work, and number of clients are interrelated risk factors rather than separate determinants. Inconsistent condom use increases biological exposure, longer duration of sex work increases cumulative exposure, and higher number of clients increases contact frequency. The strongest and most consistent evidence appears for condom use and number of clients, while duration of sex work shows more mixed findings across studies. The main weakness of prior studies is the dominance of cross-sectional designs, non-probability sampling in several studies, self-reported sexual behavior, and different STI outcome measurements. Therefore, future studies should use stronger designs, clearer exposure definitions, laboratory-confirmed STI outcomes, and multivariable analysis that controls for social and structural factors. Based on the integrated findings, STI prevention among commercial sex workers should prioritize consistent condom use, routine STI screening, targeted outreach for workers with high client volume, and prevention support for those with longer exposure in sex work.

Conclusion

Based on results literature review of 10 articles indicates that STI incidence among commercial sex workers is shaped by interconnected behavioral and occupational factors, especially inconsistent condom use, longer duration of sex work, and higher number of clients. Condom use and number of clients appear as the most consistent risk indicators, while duration of sex work shows more varied findings across studies, suggesting that its effect depends on condom negotiation, access to screening, and working conditions. These findings imply that STI prevention should not rely only on individual education, but also strengthen practical interventions such as free condom access, negotiation-skills training, routine STI screening, targeted outreach for workers with high client volume, and supportive health services that reduce stigma and improve early treatment.

Acknowledgments

We would like to express our sincere gratitude to the Rector of Universitas Ngudi Waluyo, the Dean of the Faculty of Health Sciences, the Head of the Undergraduate Midwifery Study Program, all lecturers, and everyone who contributed and supported the completion of this study.

References

Barrow, A., Abatan, B. O., Omotosho, T. O. A., Adebayo, A. M., Sanyang, E., & Bass, P. (2026). Perceived Social Support, Contact Violence Experience, and Sexually Transmitted Infection Risk among Gambian Female Sex Workers: A LASSO-Guided, Causal Inference, and Multilevel Analysis. Journal of Epidemiology and Global Health, 16(1), 21. https://doi.org/10.1007/s44197-026-00521-2

Bitty-Anderson, A. M., Gbeasor-Komlanvi, F. A., Bakoubayi, A. W., Tchankoni, M. K., Sadio, A. J., Salou, M., Dagnra, C. A., Ekouevi, D. K., & Coffie, P. A. (2022). High burden of self-reported sexually transmitted infections among female sex workers in Togo in 2021. Frontiers in Public Health, 10. https://doi.org/10.3389/fpubh.2022.915029

Decker, M. R., Park, J. N., Allen, S. T., Silberzahn, B., Footer, K., Huettner, S., Galai, N., & Sherman, S. G. (2020). Inconsistent Condom Use Among Female Sex Workers: Partner-specific Influences of Substance Use, Violence, and Condom Coercion. AIDS and Behavior, 24(3), 762–774. https://doi.org/10.1007/s10461-019-02569-7

Ginting, G. M., Girsang, E., & Nasution, S. W. (2025). Sexually Transmitted Diseases Determinant among Online Sex Workers in Indonesia . Berkala Ilmu Kesehatan Kulit Dan Kelamin, 37(2).

Kampman, C. J. G., Peters, C. M. M., Koedijk, F. D. H., Berkenbosch, T. S., Hautvast, J. L. A., & Hoebe, C. J. P. A. (2022). Sexual risk and STI testing behaviour among Dutch female and male self-employed sex workers; a cross-sectional study using an Internet based survey. BMC Public Health, 22(1), 1155. https://doi.org/10.1186/s12889-022-13582-2

Karamy, S. E., & Sudaryo, M. K. (2024). Factors Associated with Chlamydia Infection among Female Sex Workers in West Jakarta: Analysis of the 2018-2019 Integrated Biological and Behavioral Survey. Jurnal Epidemiologi Kesehatan Komunitas, 9(2), 113–121. https://doi.org/10.14710/jekk.v9i2.23070

Kawser, M., Khan, Md. N. I., Hossain, K. J., & Islam, S. N. (2024). Social and structural determinants associated with the prevalence of sexually transmitted infections among female commercial sex workers in Dhaka City, Bangladesh. PLOS Global Public Health, 4(1), e0002797. https://doi.org/10.1371/journal.pgph.0002797

Kiyingi, J., Nabunya, P., Bahar, O. S., Mayo-Wilson, L. J., Tozan, Y., Nabayinda, J., Namuwonge, F., Nsubuga, E., Kizito, S., Nattabi, J., Nakabuye, F., Kagayi, J., Mwebembezi, A., Witte, S. S., & Ssewamala, F. M. (2022). Prevalence and predictors of HIV and sexually transmitted infections among vulnerable women engaged in sex work: Findings from the Kyaterekera Project in Southern Uganda. PLOS ONE, 17(9), e0273238. https://doi.org/10.1371/journal.pone.0273238

Muleia, R., Banze, A. R., Damião, S. L., & Baltazar, C. S. (2024). Patterns of inconsistent condom use and risky sexual behaviors among female sex workers in Mozambique. BMC Public Health, 24(1), 2711. https://doi.org/10.1186/s12889-024-20236-y

Omidi, T., Oshnouei, S., Mahdi-Akhgar, M., Mohammadian-Khoshnoud, M., & Mohammadi, Y. (2023). Barriers to Condom Use among Female Sex Workers: A Systematic Review and Meta-Analysis. Current Women s Health Reviews, 19(3). https://doi.org/10.2174/1573404819666220628142038

Rosita, R., Herawati, Y., Ira Kartika, Oktarina Sri Iriani, Dyah Triwidiyantari, & Dian Purnama Sari. (2023). Faktor Determinan Infeksi Menular Seksual Dan HIV/AIDS Di Puskesmas Ibrahim Adjie Kota Bandung Tahun 2022. Jurnal Medika Nusantara, 1(2), 327–336. https://doi.org/10.59680/medika.v1i2.595

Shushtari, Z. J., Salimi, Y., Hosseini, S. A., Sajjadi, H., & Snijders, T. A. B. (2021). Determinants of safe sexual behavior of female sex workers in Tehran: the woman, her network, and the sexual partner. BMC Public Health, 21(1), 2219. https://doi.org/10.1186/s12889-021-12266-7

Tampubolon, R. D., & Herdayati, M. (2024). Risk Factors of Syphilis Infection among Female Sex Workers (FSW) in Indonesia 2018/2019: A Cross Sectional Study. Indian Journal of Public Health Research & Development, 15(2), 187–192. https://doi.org/10.37506/r1sv1w27

Wariso, F. B., Ayalew, J., Barba, A., Bedassa, B. B., Ebo, G. G., Tura, J. B., Rameto, M., Belihu, W. B., Asfaw, D., Amogne, M. D., Negeri, L., Lulseged, S., & Abrahim, S. A. (2023). Determinants of sexually transmitted infections among female sex workers in Ethiopia: a count regression model approach. Frontiers in Public Health, 11. https://doi.org/10.3389/fpubh.2023.1190085

WHO. (2025). Sexually transmitted infections (STIs).