

AWARENESS ON PREVENTION OF HIV/AIDS AMONG FEMALE SEX WORKERS OF DAULATDIA BROTHEL IN BANGLADESH

Mohammad Abul Bashar^{1*}, Mohib Ullah Khondoker¹, Md. Tariqul Islam¹, Manzur Kadir Ahmed², AKM Rezaul Haque², Rahnuma Rahman³, Shaila Sharmin Raza³, Mahjebin Chowdhury⁴

Abstract

HIV/AIDS is a global health problem. The prevalence of HIV/AIDS is relatively low in Bangladesh. Moreover, the possibility of HIV/AIDS among sex workers is high. The objective of this study was to explore the awareness of female sex workers in the prevention of HIV/AIDS. This cross-sectional study was conducted among the FSWs at the Daulatdia brothel in Bangladesh. Data were collected during November and December 2021 by face to face interviews using a semi-structured questionnaire from the conveniently selected 300 FSWs. The mean (\pm SD) age of the respondents was 30.76 ± 7.67 years, 33.3% had no formal education and the majority (67%) were unmarried. Most of the respondents (91.7%) heard something about HIV/AIDS, only 36% knew about having no vaccine against HIV/AIDS, 70.3% knew about the transmission of HIV/AIDS through unprotected sex, 97.3% considered themselves as a high-risk group for HIV/AIDS and 69.3% knew about the prevention of HIV/AIDS by using condoms during sexual intercourse. Most of the respondents (98%) knew about HIV/AIDS counselling and testing and all those who knew about counselling and testing had been tested. Only 4% of FSWs' partners consistently use condoms during sexual intercourse. The magnitude of the HIV test is significantly associated with FSWs' knowledge on risk factors of HIV/AIDS (Sex workers are at risk of HIV, $p=.009$) and HIV counselling and testing ($p<.001$). The pattern of condom use was also significantly associated with knowledge on the mode of transmission (HIV/AIDS can be transmitted by sex without a condom, $p<.001$), knowledge on preventive measures (HIV/AIDS can be prevented by using a condom during sexual intercourse, $p<.001$) and knowledge on treatment (there is the treatment of HIV/AIDS, $p<.001$). Policymakers must take programmes to increase the awareness of the FSWs in the prevention of HIV/AIDS. Clients need to be encouraged to use condoms during sexual intercourse.

Keywords: Female Sex Workers (FSWs), HIV/AIDS, Daulatdia Brothel, Bangladesh

¹Associate Professor of Community Medicine, Gonoshasthaya Samaj Vittik Medical College, Savar, Dhaka-1344.

²Assistant Professor of Community Medicine, Gonoshasthaya Samaj Vittik Medical College, Savar, Dhaka-1344.

³Lecturer of Community Medicine, Gonoshasthaya Samaj Vittik Medical College, Savar, Dhaka-1344.

⁴Assistant Director, Gonoshasthaya Kendra, Savar, Dhaka-1344.

* Corresponding Authors email: email: bashar@gonosvmc.edu.bd, Phone: +880 1712232602.

Introduction

HIV/AIDS is a major public health problem. Despite the global decline, AIDS was the fifth leading cause of global disability-adjusted life years (DALYs) in 2010 and continues to have devastating health effects (Ortblad, Lozano and Murray, 2013; Pandey and Galvani, 2019). By the end of 2020, 37.7 million people were infected with HIV and an estimated 0.7% of people between 15–49 years of age worldwide are living with HIV/AIDS (WHO, 2021). The HIV/AIDS burden distribution is different in different demographic regions. Over the last decade, the prevalence of HIV/AIDS has increased in South Africa, Nigeria, Mozambique, India, Kenya and the United States and is rising every year in Europe, South America and North America (Govender *et al.*, 2021).

Before the detection of the first case of HIV/AIDS in 1989, the Bangladesh government was active in preventing HIV/AIDS and formed the national AIDS committee in 1985 (Azim *et al.*, 2008). The prevalence rate of HIV/AIDS is relatively low in Bangladesh, which is less than 0.1% until 2014, but the numbers are steadily rising now (Mominur Rahman *et al.*, 2021). Due to the high prevalence of HIV in neighbouring countries and the presence of risk factors like overpopulation and migration, Bangladesh is considered to be vulnerable to HIV (S. M. Uddin *et al.*, 2014). Even though many people are at risk of HIV/AIDS, sex workers are the most vulnerable group due to overindulgence in commercial sex and brothels are at extreme risk. Thousands of customers from different areas of the country enter the brothels every day. Sex workers and clients can easily get infected with AIDS due to their free association. HIV can be transmitted sexually and through the exchange of blood from infected people and also from the mother to her child during pregnancy and delivery. Immunocompromised people are at the largest risk of being affected by AIDS (Teche, 1990). In most cases, it happens in a medium to a low standard of living. HIV risk arises mainly from unprotected vaginal or anal sex, sharing of unclean or used syringes and needles, injecting drug users etc. Some factors such as an individual's socio-cultural and socio-environmental state may enhance the risk of AIDS among sex workers by limiting their capability to enter safer sexual practice with their intimate partner (Sinha, 2017). FSWs are more likely to be economically vulnerable and experience violence and criminalization and are more at risk of HIV and AIDS compared with the general population.

There was negligence in using condoms because of the client's dissatisfaction (Mahejabin, Nahar and Parveen, 2015). Although, inconsistent use of condoms has a higher risk of HIV/AIDS including other sexually transmitted diseases, the regular use of condoms is seldom found (Farabi T *et al.*, 2021). Till now there is no treatment to cure the disease completely. Some antiretroviral therapy can delay the progress of the disease. So, prevention is the only way to stay healthy. But access to preventive services for sex workers is still very low. This study aimed to explore the awareness of female sex workers in the prevention of HIV/AIDS.

Materials And Methods

Study design, population and sampling: This cross-sectional study was conducted among the female sex workers (FSWs) of Daulatdia brothel at Gualondo upazila of Rajbari district in Bangladesh. Daulatdia is one of the largest brothels in Bangladesh. There are 3000 FSWs are living in this brothel. The FSWs who are living there for at least one month or more were included in this study. Initially, 306 FSWs were selected conveniently. The participants who had incomplete interviews were excluded. Finally, the sample size was 300. No statistical formula was used in the calculation of sample size.

Data collection and analysis: Data were collected by two trained paramedics of Gonoshasthaya Kendra (GK) through face to face interviews during November and December 2021. GK is a pioneer of non-government health-related organizations in Bangladesh. An interviewer-administered semi-structured questionnaire was used. Data were analyzed in SPSS (version 23.0) software. Descriptive statistics estimated mean, standard deviation, frequency and percentage. Inferential statistics included the chi-square test. A p-value $<.05$ was considered significant.

Ethical issues: The study was conducted by maintaining all kinds of ethical issues at different stages of the study. Participation of female sex workers was voluntary. Informed verbal consent was obtained from the participants before data collection. The respondents had full freedom to withdraw their consent at any stage of the study.

Results

Baseline characteristics

The majority (48%) of the respondents were in the 25-34 years age group, one-third (33.3%) had no formal education, 67% were unmarried, more than half (59%) of the respondents lived at the brothel for 1-10 years and their mean duration of staying at the brothel was 10.7 ± 8.36 years. In the last 3 months, about half (51.7%) of the respondents had 1-100 sexual partners, 32% had 101-300 sexual partners, 13.3% had 301-990 sexual partners and 3% had no sexual partner.

Table 1: Baseline characteristics of the respondents (N=300)

Characteristics	N	%
Age in years		
17-24	59	19.7
25-34	144	48.0
35-44	79	26.3
45-55	18	6.0
		<i>mean±SD: 30.76±7.67</i>
Education		
No formal education	100	33.3
Class I-V	145	48.3
Class VI-X	47	15.7
SSC and higher	8	2.7
Marital status		
Unmarried	201	67.0
Married	99	33.0
Duration to stay at the brothel		
1 month to < 1 year	10	3.3
1-10 years	177	59.0
11-20 years	80	26.7
21-30 years	25	8.3
31-40 years	8	2.7
		<i>mean±SD: 10.7±8.36</i>
Sexual partner in the last 3 months		
No sexual partner	9	3.0
1-100	155	51.7
101-300	96	32.0
301-990	40	13.3
		<i>mean±SD: 135.9±146.2</i>

Awareness on HIV/AIDS

Table 2 shows that 91.7% of respondents knew somewhat about HIV/AIDS, 36% knew that there is no vaccine against HIV/AIDS. About half (53%) of the respondents thought that there is

a treatment for HIV/AIDS, 96.7% knew that a healthy-looking person can have HIV/AIDS, 70.3% said HIV/AIDS can transmit by sex without a condom, 69.3% thought that HIV infection can be prevented by using condoms during sexual intercourse.

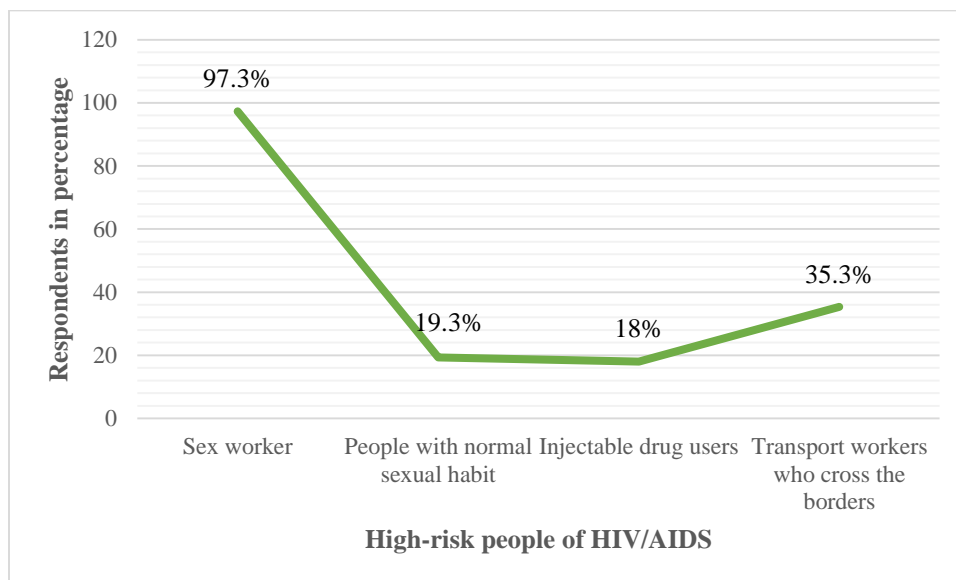
Table 2: Distribution of respondents by their knowledge on HIV/AIDS (N-300)

Characteristics	N	%
Have you ever heard of HIV/AIDS?		
<i>Yes</i>	275	91.7
<i>No</i>	25	8.3
Is there any vaccine for HIV/AIDS		
<i>Yes</i>	159	53.0
<i>No</i>	108	36.0
<i>Do not Know</i>	33	11.0
Is there any treatment for HIV/AIDS?		
<i>Yes</i>	159	53.0
<i>No</i>	104	34.7
<i>Do not Know</i>	37	12.3
Can a healthy-looking person have HIV/AIDS?		
<i>Yes</i>	290	96.7
<i>No</i>	3	1.0
<i>Don't Know</i>	7	2.3
Mode of transmission (multiple responses)		
<i>Transplacental from mother to foetus</i>	283	94.3
<i>Transmit through breastfeeding</i>	287	95.7
<i>Blood transfusion</i>	223	74.3
<i>Sex without a condom</i>	211	70.3
<i>Sharing unclean or used needles</i>	208	69.3
How to prevent HIV infection (multiple responses)		
<i>Using a condom every time</i>	208	69.3
<i>Abstain from sexual intercourse</i>	137	45.7
<i>Avoid injectable drugs</i>	73	24.3
<i>Avoid blood transfusion</i>	128	42.7

Knowledge on high-risk people of HIV/AIDS

Among the respondents, 97.3%, 19.3%, 18% and 35.3% thought that sex workers, people with normal sexual habits, injectable drug users and transport workers are at high-risk for HIV/AIDS respectively.

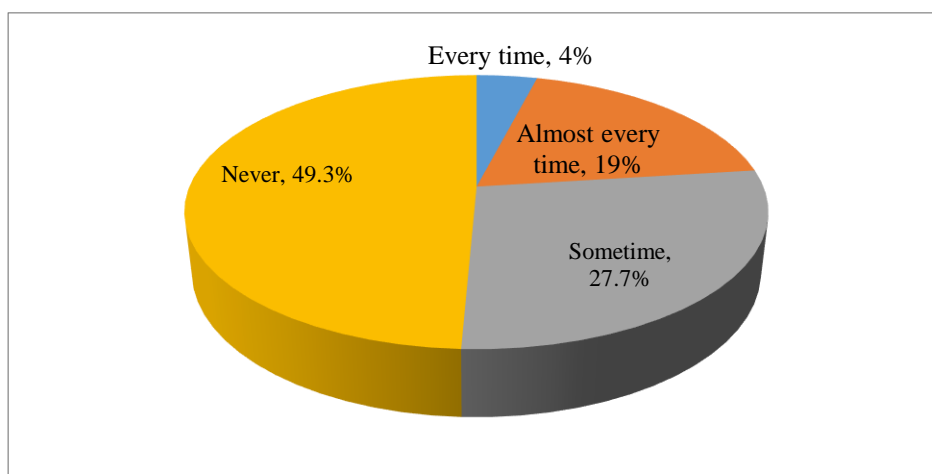
Figure 1: According to FSWs response (multiple responses), high-risk people of HIV/AIDS (N=300)



Practices of condom use

Figure 2 illustrates that 4%, 19% and 27.7% of sex worker's partners used condoms every time, almost every time and sometimes respectively and 49.3% never used condoms.

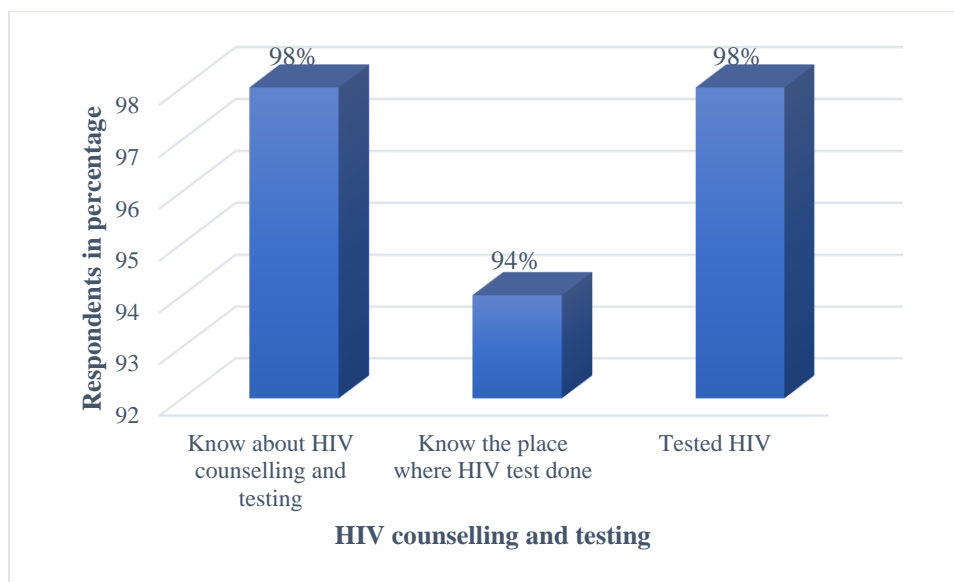
Figure 2: Pattern of condom use during sexual intercourse among the female sex workers' partners in the last three months (N=300)



Knowledge and practice on volunteer counselling and testing

Figure 3 shows that 98% of respondents knew about HIV counselling and testing, 94% knew the place where the HIV test was done and 98% tested for HIV.

Figure 3: Volunteer counselling and testing (N=300)



Condom use and associated factors

Table 3 shows that the proportion of consistent condom use was high among the respondents between 17-34 years ($p=.196$) and among the respondents who know that HIV/AIDS can be prevented by using a condom during sexual intercourse ($p<.001$). The proportion of condom use was also high among the FSWs who thought that there is treatment of HIV/AIDS ($p<.001$).

Table 3: Factors associated with condom use

Associated factors		The pattern of condom use				Total N (%)	Sig.
		Every time N (%)	Almost every time N (%)	Sometime N (%)	Never N (%)		
Age in years	17-34	9(75%)	35(61.4%)	51(61.4%)	108(73%)	203 (67.7)	$P=.196$
	35-55	3(25%)	22(38.6%)	32(38.6%)	40(27%)		
	Total	12(100%)	57(100%)	83(100%)	148(100%)		

<i>HIV/AIDS can be transmitted by sex without a condom (Knowledge)</i>	<i>Yes</i>	6(50%)	53(93%)	39(47%)	113(76.4%)	211 (70.3)	<i>p<.001</i>
	<i>No</i>	6(50%)	4(7%)	44(53%)	35(23.6%)	89 (29.7)	
	<i>Total</i>	12(100%)	57(100%)	83(100%)	148(100%)	300 (100)	
<i>HIV/AIDS can be prevented by using a condom in sex (Knowledge)</i>	<i>Yes</i>	11(91.7%)	12(21.1%)	57(68.7%)	128(86.5%)	208 (69.3)	<i>p<.001</i>
	<i>No</i>	1(8.3%)	45(78.9%)	26(31.3%)	20(13.5%)	92 (30.7)	
	<i>Total</i>	12(100%)	57(100%)	83(100%)	148(100%)	300 (100)	
<i>There is the treatment of HIV/AIDS (Knowledge)</i>	<i>Yes</i>	4(33.3%)	50(87.7%)	47(56.6%)	58(39.2%)	159 (53)	<i>p<.001</i>
	<i>No</i>	3(25%)	7(12.3%)	18(21.7%)	76(51.4%)	104 (34.7)	
	<i>Don't know</i>	5(41.7%)	0(0.0%)	18(21.7%)	14(9.5%)	37 (12.3)	
	<i>Total</i>	12(100%)	57(100%)	83(100%)	148(100%)	300 (100)	

HIV test and associated factors

As seen in the following table, among the respondents who had been tested for HIV/AIDS, 98% knew that sex workers are at risk of HIV/AIDS ($p=.009$) and 99% knew about HIV counselling and testing ($p<.001$).

Table 4: HIV test and associated factors

FSWs knowledge		Tested HIV/AIDS		Total N (%)	Significance
		<i>Yes</i> N (%)	<i>No</i> N (%)		
<i>Knowledge on "sex workers are at risk of HIV"</i>	<i>Yes</i>	288 (98%)	4 (66.7%)	292 (97.3)	<i>P=.009</i>
	<i>No</i>	6 (2%)	2 (33.3%)	8 (26.7)	
	<i>Total</i>	294(100%)	6(100%)	300 (100)	
<i>Knowledge on "HIV counselling and testing"</i>	<i>Yes</i>	291 (99.0%)	3 (50%)	294 (98%)	<i>p<.001</i>
	<i>No</i>	3 (1%)	3 (50.0%)	6 (2%)	
	<i>Total</i>	294(100%)	6(100%)	300 (100.0)	

Discussion

This single-centred cross-sectional study was conducted to find out how much the FSWs are aware of the prevention of HIV/AIDS. As part of the awareness on HIV/AIDS, we analyzed whether the FSWs have heard anything about AIDS, how AIDS is transmitted, who is at risk of AIDS, how to prevent AIDS and what they are doing to prevent AIDS.

Regarding awareness of HIV/AIDS, most respondents (91.7%) knew somewhat about HIV/AIDS. Although there is no vaccine or complete cure for HIV/AIDS, 53% said that there is a vaccine against HIV/AIDS. The same proportion (53%) of FSWs said that there is treatment of HIV/AIDS. A similar study found only 18% of sex workers heard about HIV and 5% said that HIV is a curable disease (Islam, 1998). However, Islam Mondal *et al.*, 2019, found the prevalence of knowledge on HIV/AIDS among urban women was 83.1%. About the mode of transmission, 70.3% of respondents said HIV/AIDS could be transmitted by sex without a condom. Regarding preventive measures, 69.3% of FSWs thought that HIV infection could be prevented by using condoms during sexual intercourse. Islam, 1998, reported only 8% of sex workers thought that HIV/AIDS was a sexually transmitted disease and another 8% said that HIV/AIDS could be prevented by using condoms during sexual intercourse. Sex workers are usually the high-risk group for HIV/AIDS. In the present study, 97.3% of FSWs thought that they are the high-risk group for HIV/AIDS. A similar study also explored the same findings (Azim *et al.*, 2008).

The consistent use of condoms during sexual intercourse as well as early diagnosis and treatment can reduce the risk of AIDS. The male condom is currently the only effective widely available method in the prevention of HIV/AIDS and other STDs. But most of the clients are reluctant to use condoms for physical intercourse. In the hope of fulfilling the desires of the customers and in the hope of more income, the FSWs have been bound to unprotected sex. In the present study, only 4% of sex workers had sex using condoms every time and 49.3% had sex without condoms by their male partners. Other studies reported that 72.2% of FSWs had sex without a condom (Patricio *et al.*, 2019), 33.6% of FSWs had sex without a condom (Cai *et al.*, 2010) and 47.2% had sex without condoms (Dandona *et al.*, 2005). Another study conducted at the Sonagachi brothel in India found that 25% of FSWs had sex with consistent condom use by their male partners (Basu *et al.*, 2004).

The pattern of condom use was significantly associated with awareness on the mode of transmission (HIV/AIDS could be transmitted by sex without a condom, $p < .001$), preventive measures (HIV/AIDS could be prevented by using a condom during sexual intercourse, $p < .001$) and treatment (there is the treatment of HIV/AIDS, $p < .001$). Though statistically non-significant, the pattern of condom use was associated with decreasing age, 75% of respondents aged 17-34 years had sex with condoms, in contrast, 25% of respondents aged 35-60 years had sex with a condom ($p = .196$). A similar study found a significant difference in condom use with male partners between sex workers over 30 years of age (64%) and below 30 years of age (87%) (Wong *et al.*, 1994). Another similar study found a significant association between condom use and unmarried respondents (single women) (Abdul Manaf *et al.*, 2019). Among the respondents who had been tested for HIV/AIDS, 98% knew that sex workers are at risk of HIV/AIDS ($p = .009$) and 99% knew about HIV counselling and testing ($p < .001$). A similar study reported that 68% of FSWs tested for HIV and this was associated with education, age and economic status (S. M. Uddin *et al.*, 2014 and M. J. Uddin *et al.*, 2014). Though FSWs have to face social obstacles to access health services, almost everyone (98%) was tested for HIV infection.

Limitations of the study

Access to the FSWs was a big challenge in this study. There was fear among the FSWs that their identity might be revealed. To overcome this challenge, field data collection was conducted by female paramedics and anonymity was applied.

Conclusion

In this study, the FSWs' understanding of the high-risk group for HIV/AIDS, mode of transmission, preventive measures and HIV counselling and testing was satisfactory. However, condom use was inadequate during sexual intercourse. For the prevention of HIV/AIDS, consistent condom use among FSWs' clients should be promoted.

Acknowledgement

The authors would like to express their sincere gratitude to the Centre for Community Health and Research (CCHR) team and the Daulatdia Gonoshasthaya Kendra team for their consistent support in the completion of field data collection.

Conflict of interest

The authors declare that they do not have any conflict of interest.

References

- Abdul Manaf, R. *et al.* (2019) “Consistent condom use and its predictors among female sexual Partners of People who Inject Drugs in Klang Valley, Malaysia,” *BMC Public Health*, 19(1), pp. 4–11. doi:10.1186/s12889-019-7855-1.
- Azim, T. *et al.* (2008) “HIV and AIDS in Bangladesh,” *Journal of Health, Population and Nutrition*, 26(3), pp. 311–324. doi:10.3329/jhpn.v26i3.1898.
- Basu, I. *et al.* (2004) “HIV prevention among sex workers in India,” *Journal of Acquired Immune Deficiency Syndromes*, 36(3), pp. 845–852. doi:10.1097/00126334-200407010-00012.
- Cai, Y. *et al.* (2010) “A study of HIV/AIDS related knowledge, attitude and behaviors among female sex workers in Shanghai China,” *BMC Public Health*, 10(1), p. 377. doi:10.1186/1471-2458-10-377.
- Dandona, R. *et al.* (2005) “High risk of HIV in non-brothel based female sex workers in India,” *BMC Public Health*, 5, pp. 1–10. doi:10.1186/1471-2458-5-87.
- Govender, R.D. *et al.* (2021) “Global Epidemiology of HIV/AIDS: A Resurgence in North America and Europe,” *Journal of epidemiology and global health*, 11(3), pp. 296–301. doi:10.2991/jegh.k.210621.001.
- Farabi T, *et al.* (2021) "Sexually Transmitted Infections among Street, Hotel, and Residence-Based Female Sex Workers in Dhaka, Bangladesh: Prevalence from Three HIV/STI Drop-in-Centers" *Sexes* 2, no. 1: 69-78. <https://doi.org/10.3390/sexes2010006>
- Islam, M.M. and Conigrave, K.M. (2008) “HIV and sexual risk behaviors among recognized high-risk groups in Bangladesh: need for a comprehensive prevention program,” *International Journal of Infectious Diseases*, 12(4), pp. 363–370. doi:10.1016/j.ijid.2007.12.002.
- Islam Mondal, N. *et al.* (2019) “Knowledge about HIV/AIDS among women in Bangladesh: an urban-rural comparison of trend, attitude and determinants,” *Biometrics & Biostatistics International Journal*, 8(5), pp. 162–170. doi:10.15406/bbij.2019.08.00285.
- Islam, M.W. (1998) “Journal of Epidemiology Vol. 8, No. 3 Aug,” 8(3), pp. 181–183.
- Mahejabin, F., Nahar, L. and Parveen, S. (2015) “Sexual lifestyle and socio-demographic profile of female floating sex workers in some selected areas of Dhaka city,” *Pulse*, 7(1), pp. 29–37. doi:10.3329/pulse.v7i1.23247.

- Mominur Rahman, M. *et al.* (2021) “Studies on the prevalence of HIV/AIDS in Bangladesh including other developing countries,” *Advances in Traditional Medicine* [Preprint]. Springer. doi:10.1007/s13596-021-00610-6.
- Ortblad, K.F., Lozano, R. and Murray, C.J.L. (2013) “The burden of HIV: Insights from the global burden of disease study 2010,” *Aids*, 27(13), pp. 2003–2017. doi:10.1097/QAD.0b013e328362ba67.
- Pandey, A. and Galvani, A.P. (2019) “The global burden of HIV and prospects for control,” *The Lancet HIV*, 6(12), pp. e809–e811. doi:10.1016/S2352-3018(19)30230-9.
- Patrício, A.C.F. de A. *et al.* (2019) “Knowledge of sex workers about HIV/AIDS and its influence on sexual practices,” *Revistabrasileira de enfermagem*, 72(5), pp. 1311–1317. doi:10.1590/0034-7167-2018-0590.
- Sinha, S. (2017) “Sex Workers and HIV/AIDS in India,” *Encyclopedia of Social Work* [Preprint], (April). doi:10.1093/acrefore/9780199975839.013.1189.
- Teche, B. (1990) “AIDS update.,” *Nebraska nurse*, 23(4), p. 17.
- Uddin, M.J. *et al.* (2014) “Vulnerability of Bangladeshi street-children to HIV/AIDS: A qualitative study,” *BMC Public Health*, 14(1). doi:10.1186/1471-2458-14-1151.
- Uddin, S.M. *et al.* (2014) “High-risk behavior of HIV/AIDS among females sex workers in Bangladesh: Survey in Rajshahi City,” *Japanese Journal of Infectious Diseases*, 67(3), pp. 191–196. doi:10.7883/yoken.67.191.
- WHO, (2021). Available from: <https://www.who.int/data/gho/data/themes/hiv-aids#:~:text=Global%20situation%20and%20trends%3A&text=Globally%2C%2037.7%20million%20%5B30.2-,considerably%20between%20countries%20and%20regions.> Accessed on: 14/05/2022.
- Wong, K.H. *et al.* (1994). “Condom use among female commercial sex workers and male clients in Hong Kong,” *Int J STD AIDS*. 5(4):287-9. doi: 10.1177/095646249400500412. PMID: 7948161.
- World Bank, (2012). PMID: PMC6839187. Available from: <https://www.worldbank.org/en/news/feature/2012/07/10/hiv-aids-bangladesh>. Accessed on: 15/05/2022.