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Risks of HIV/AIDS Transmission: A Study on the Perceptions of the Wives of Migrant Workers of Bangladesh

By Humayun Kabir (HK)¹, Syadani Riyad Fatema (SRF)², Saiful Hoque (SH)³, Mst. Jesmin Ara⁴ and Myfanwy Maple⁵

Abstract

In recent years, an increasing number of Bangladeshi men have been working overseas. Whilst working abroad, some migrants engage in unprotected sexual activities, making them vulnerable to different kinds of sexually transmitted infections (STIs) including the Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS). Upon return home, the wives of these migrant workers are also highly susceptible to contracting HIV/AIDS. This study explores how and what the wives of the migrant workers perceive as practices of health safety regarding HIV/AIDS. In this connection, the Health Belief Model (HBM) was used as a theoretical lens for this study. Data were collected (from January to March 2017) in two phases by using a mixed-method approach. In the first phase, a structured questionnaire survey was conducted among the purposively selected 122 wives of migrant workers from Chaudhagram Upazila (sub-district) of Cumilla (previously known as Comilla) district, Bangladesh. The survey data were processed, computed, and analysed through SPSS software (version 19). For the second phase, nine wives of migrant workers were purposively selected for an in-depth interview to grasp more detailed qualitative understanding of this experience. The in-depth interviews were transcribed and analysed thematically. The findings demonstrate many misperceptions about the transmission of HIV/AIDS, including through casual social contact. Stigmatising views were also common, for example, 24% of the participants opined that HIV transmits via hugging, sharing clothes, and sweat of the person living with HIV. In addition, the overwhelming majority of the participants (69%) believed that the HIV/AIDS affected person should be treated by being placed in quarantine. Moreover, 91% of the participants did not intend to suggest their husbands for HIV screening upon their return due to fear of being divorced, shyness, social stigma, and lack of feeling risk (to be infected by HIV) although 25% of them felt that there could be a risk of being infected by HIV due to sexual contact with their returned husbands. Education level, the role of the media, husbands' long duration of staying abroad, and access to information were found to be significantly associated with the components of HIV awareness (such as hearing and sharing about HIV/AIDS,

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knowledge on how it spreads, and feeling of risk) among the wives of the migrant workers in bivariate analyses. These findings highlight unequal gender relations, women's lack of empowerment, men's hegemonic masculine power, and overall misconceptions about HIV/AIDS transmission are the key components in creating migrant workers' wives' vulnerability to HIV/AIDS.

Keywords: HIV/AIDS, Migrant workers, Women, Prevention, Media, Bangladesh

Introduction

The global spread of HIV/AIDS introduced the most dangerous epidemic threat to human existence and civilization. In 2018, people living with HIV/AIDS have increased to 37.9 million, the number of newly infected people is 1.7 million and 1.1 million people died from AIDS-related illness (UNAIDS, 2019a). The spread of this blood borne illness, with high prevalence in some countries and risk groups, has brought this issue to the attention of public health professionals, policy makers and governments across the globe. Prevalence and risk factors are socially and culturally bound (Agadjanian & Markosyan, 2017; Aryal et al., 2016; Rai et al., 2014; Golobof, Weine, Bahromov, & Luo, 2011; Qin et al., 2009; Zuma, Gouws, Williams, & Lurie, 2003; Lurie et al., 2003; Shah, Khan, Kristensen, & Vermund, 1999). Considering its socioeconomic and geopolitical situation, Bangladesh is considered as a high-risk zone in terms of HIV/AIDS (Etzold & Mallick, 2015). The first detection of an HIV/AIDS case in Bangladesh was in 1989. Now, the UNAIDS estimates that a total number of 1,000 deaths have been recorded and 14,000 people (all ages) are living with HIV in this country in 2018 (UNAIDS, 2019b). The report also estimates that, in 2018, 4,800 women (aged 15 and over) are living with HIV, and the number of newly infected women is 500. A significant number of studies show that HIV/AIDS is dangerously prevalent among migrant workers (Davies, Borland, Blake, & West, 2011), migrant women sex workers (Gazi, Parveen, & Kabir, 2009), sex workers (Huq & Chowdhury, 2012), ethnic tribal male youth (Kamal, 2012) and street children (Uddin et al., 2014) in Bangladesh. Although the overall prevalence of HIV/AIDS is low, women are more vulnerable due to cultural hierarchy which preferences men (Sheikh, Uddin, & Khan, 2017), and those who are at greatest risk are women who are married to men who work in migrant labour roles.

The economy of Bangladesh depends on the remittances of migrant workers. Every year about five hundred thousand Bangladeshis leave Bangladesh to undertake migrant work (Etzold & Mallick, 2015). The majority work occurs in Middle Eastern countries. In such countries, safe sex is not commonly practiced because of the low level of education, poor socioeconomic backgrounds and low level of knowledge regarding HIV of both clients and sex workers (UNDP, 2008). Thus whilst employed in other locations, these migrant workers are vulnerable to sexually transmitted infections (STIs), including HIV, due to engaging in unprotected sexual activities with the sex workers sourced from the least developed countries who have migrated to the host countries as domestic workers (Davies et al., 2011). Upon their return home, men who have been infected then pass these infections on to their wives.

This risk is not isolated to Bangladesh. Other neighboring countries, with similar migrant employment patterns have also reported these infection pathways. For example, research conducted on migrant workers' wives' vulnerabilities to HIV infections in the neighboring countries of Bangladesh; such as Nepal (Aryal et al., 2016; Thapa, Bista, Timilsina, Buntinx, & Mathei, 2014) and India (Ranjan, Bhatnagar, Babu, & Detels, 2017; Ranjan, 2013), and Tajikistan (Golobof et al.,

2011) have all found that migrant workers' wives are highly vulnerable to HIV infection. These studies consistently find that a lack of knowledge about HIV/AIDS, male cultural dominance and the women being unaware or unable to play an active and effective role to be protected from HIV (Golobof et al., 2011). Yet, how women experience navigating protection from HIV/AIDS within their relationships, and where they receive information about safe sex practices, remains unknown.

The present study aims to understand the perceptions, knowledge, and practices regarding HIV/AIDS infections among the wives of the Bangladeshi migrant workers. Specifically, the study aims to explore: (i) whether migrant workers' wives perceive the risks of being infected by HIV/AIDS; (ii) the migrant workers' wives' knowledge, attitudes, and behaviors regarding HIV/AIDS; (iii) the HIV/AIDS-related knowledge gap among migrant workers' wives by their education status and access to HIV/AIDS related information; and (iv) the role of media in creating awareness among migrant workers' wives regarding HIV/AIDS transmissions and infections. After reviewing the relevant literature and analysing the Health Belief Model (HBM), the study has posed four hypotheses: (H1) the higher the participants' level of education, the lower the possibility of being infected by HIV/AIDS; (H2) staying abroad for a long period of time increases the possibility for the migrant workers' wives to be infected by HIV/AIDS; (H3) access to information on HIV/AIDS increases the knowledge level of this virus/the possibility of sharing about this virus between husband and wife; and (H4) there is a positive correlation between the quantity of media messages and the level of awareness on HIV/AIDS. To test the aforementioned hypotheses, statistical test Chi-square and Cramer's *V* were applied. According to Cohen's guideline when the Chi-square test involves a matrix larger than 2X2, a modification of phi-coefficient, known as Cramer's *V*, can be used to measure the effect size (Cohen, 1988).

For phase one of the study, a total of 122 wives of migrant workers were purposively selected to complete the survey from Chaudagram Upazila (sub-district) situated in Cumilla district, Bangladesh. For phase two, nine wives of migrant workers were chosen for in-depth interviews. Since women in Bangladesh are considered as a high risk group due to the limited opportunity for health education (Asaduzzaman, Higuchi, Sarker, & Hamajima, 2016), it is expected that this study paves the way to future research in this particular area and contributes to bridging the gap of empirical data regarding migrant workers' wives' perceptions of HIV/AIDS.

Studies on HIV/AIDS in Bangladesh

There is a dearth of research on HIV/AIDS issues directly related to Bangladeshi women. Only some of the issues directly related to the present study have been addressed to some extent by researchers from various disciplines. Hossain, Mani, Sidik, Shahar, and Islam (2014) showed that rural women in Bangladesh were more vulnerable to STIs including HIV, due to the lack of education regarding the virus. Women are mostly confined to the household in rural areas, and because of this isolation, necessary information on HIV/AIDS infections may not be available to them. However, a study conducted by Jesmin and Cready (2016) postulated that the privileged women have a greater chance of being affected because health professionals believe them to have knowledge regarding HIV, even when they do not. They also argued that all women and communities should be engaged with the policies to teach them about reproductive health, HIV and other STIs.

While women are at risk in their own homes, further risk has also been reported among injection drug users (Mondal, Takau, Ohkusa, Sugawara, & Okabe, 2009; Haider, Ahmed, & Jaha, 2008; Ullah, 2005) along with homosexual sex workers (HSWs), bisexual sex workers (BSWs)

and female sex workers (FSWs) in Bangladesh. They (Mondal et al., 2009; Haider et al., 2008; Ullah, 2005) suggested to initiate combat programmes to educate the sex workers and injection drug users about HIV/AIDS. Young people in Bangladesh are also at risk of HIV and STIs. Ahmed, Kabir, and Fatema (2017) demonstrate this risk due to perceptions of condom use as anti-hegemonic masculine behavior and perceived pleasure reduction. Nevertheless, Islam (2014) identified adolescent as the most vulnerable group to be infected by HIV. He estimated that about 50% of adolescents were at risk of contracting HIV/AIDS. This risk also applies to children. Uddin et al. (2014) demonstrates that the most vulnerable children are those living on the streets of Bangladesh, were most vulnerable to STIs and HIV. They added that street children had poor knowledge of HIV infections and a limited understanding of the benefits of using condoms which put them in greater danger of infection. In addition, a study conducted by Kamal (2012) indicated that the tribal youth of Bangladesh were highly prone to STIs and HIV due to the lack of knowledge on how it spreads. To address this risk, Kamal (2012) argues for an Information, Education, and Communication (IEC) intervention programme to increase knowledge about infection and prevention.

There are some studies focused on migrant women workers to illustrate how they were vulnerable to HIV. From the study of Gazi et al. (2009), it is evident that women who migrate from Myanmar to Teknaf (the southern part of Bangladesh) with an ambition of better lives are often forced to engage in sex work. Rickshaw pullers, transport workers, tourists, and boatmen are the regular clients, who were found reluctant to use condoms during sex. Consequently, these migrant workers are at risks of being infected with HIV/AIDS. Furthermore, Islam, Conigrave, Miah, and Kalam (2010) found that female migrant workers were not aware of HIV transmission due to less access to information. Many of these women migrate across country borders without visas leaving them economically vulnerable leading to engagement in unprotected sex work. Consequently, they become vulnerable to HIV/AIDS. In addition to women engaged in street sex work, those working in brothels under the control of *sordarni* (landlords/pimps controlling the sex workers under own custody) have also been found to be vulnerable by Huq and Chowdhury (2012). This is due to inconsistent condom use. These authors emphasized those who are 'bonded sex workers,' that is, in some way owned by the pimp (*sordarni*) are often maltreated, including being beaten, if they refuse to perform unprotected sex.

Secondary to the concern of contracting HIV, Hasan et al. (2012) revealed that people living with HIV in Bangladesh are stigmatized and alienated from society. Many of them blame themselves for their HIV status; therefore, they stop participating in social gatherings (Hasan et al., 2012). Here, media can play an active role in stigma reduction. Representation of HIV/AIDS in a meaningful way through media could dispel the stigma surrounding the virus. A study conducted by Habib, Amanullah, Daniel, and Lovejoy (2000) attempted to highlight the reaches and the roles of mass media among high-risk groups, such as commercial sex workers (CSWs), in Bangladesh. The study found television to be the most successful electronic medium with 40.2% of reaches to the CSWs while the health workers were found in the second position with a reach to 39.2% CSWs in terms of sources of information on AIDS (Habib et al., 2000). The aforesaid studies focused on different aspects of HIV and STIs vulnerable groups in Bangladesh. However, migrant workers' wives remain an under-researched population. Therefore, this study has focused on migrant workers' wives' perceptions of HIV/AIDS so that we can better understand how they perceive HIV/AIDS-related issues.

Theoretical Framework of the Study: The Health Belief Model (HBM)

The HBM model commonly branded as a social cognitive model (1950) was developed by the US public health service. The model aims to explain why people fail to undertake precautionary health actions (Orji, Vassileva, & Mandryk, 2012; Rosenstock, 2005). This model has been also predominantly used to predict health behavior of people (Sheeran & Abraham, 1996). Rosenstock (2005) explained the HBM model with the combinations of perceived susceptibility, perceived seriousness, perceived benefits of taking action and barriers to take action and cues to action. In the present study, the HBM model is utilized to help understand the functions of vulnerability, including understanding whether a woman wants to avoid HIV infection, yet is unwilling to tell her husband who returned from abroad to go for HIV screening. She may feel personally vulnerable (perceived susceptibility) to a problem (of being infected by HIV) which can be potentially serious (perceived seriousness).

Alternatively, she may think of an action, such as asking her husband for HIV screening before coming to sexual contact, to manage the probable barriers (i.e. social stigma about screening HIV), which will ultimately be beneficial for her health through reducing the threat (perceived benefits of taking action and barriers to take action). If a woman can overcome the barriers and is ready to request her husband to go for HIV screening (she has taken an action), this is theoretically termed as 'cues to action' according to the HBM model. In addition, this model is frequently used to elucidate and foresee health risks related behavior. However, the best use of this model is fitted to predict a variety of preventive health behaviors such as sexual risk behavior. This theory mainly emphasizes two important notions such as (a) the desire to avoid illness (or if ill, to get well), and (b) the belief that a specific health action will prevent illness. Of the most used models in public health and health psychology in explaining the health behavior, the HBM provides the most appropriate theoretical framework in which the essence of the present study bases. For example, this study shows that some of the participants were aware of HIV infections and intended to suggest their husbands to go for HIV test. This kind of attitude can be explained by the notion of 'the desire to avoid illness.' In addition, they also envisioned suggesting that their husbands use condoms before getting the HIV test results in hand, which is linked to the idea that 'a specific health action will prevent illness.' In order to measure the applicability of this framework in analysing migrant workers' wives' perceptions/knowledge/practice regarding HIV, Chi-square (χ^2) and Cramer's V coefficients were calculated.

Methodology

This explorative research used mixed methods consisted of both quantitative and qualitative approaches to explore migrant workers' wives' perceptions regarding HIV/AIDS in Bangladesh. The benefit of using mixed methods research is to increase the strengths and minimize the weakness of both quantitative and qualitative approaches in a single study (Johnson & Onwuegbuzie, 2004). In addition, Yeasmin and Rahman (2012), argued that triangulation of quantitative and qualitative approaches recruits 'a process of verification that increases validity by incorporating several viewpoints and methods. In the social sciences, it refers to the combination of two or more theories, data sources, methods or investigators in one study of a single phenomenon to converge on a single construct and can be employed in both quantitative (validation) and qualitative (inquiry) studies' (p.155). In fact, the great advantage of considering use of both of these approaches is that one approach (i.e. qualitative) can compensate another (i.e. quantitative) in a mixed methods study.

The region in which this research took place is the Chattogram (previously known as Chittagong) region. This area has a large population that migrates for labour purposes with 32.5% (of the adult male population) engaging in this form of employment. Of those, 81.79% migrate to Middle Eastern countries for the labor work purpose (Bangladesh Bureau of Statistics, 2015). Within this division, the Cumilla district has the greatest number of men and women who migrate to Middle Eastern countries, which formed the basis for choosing the sub-district of this district. This research used purposeful and snowball sampling techniques to recruit the study populations inspired by Kabir, Maple, and Fatema (2018) and Kabir, Maple, Islam, and Usher (2019), who used the same techniques to access hard-to-reach populations when looking at the Rana Plaza survivors' current health and overall wellbeing status almost six years after the incident. The rationality behind using purposive sampling lies on the unavailability of a formal database containing the list of the wives of migrant workers residing at Chaudhagram Upazila (sub-district) of Cumilla district. In addition, the sensitivity of the research topic and the fear culture of revealing information were also factors in discounting probability sampling in this context. The study participants were contacted by the second author (SRF), who originates from the study location (i.e. Chaudhagram Upazila). Since she originated from Chaudhagram Upazila, it was easier for her to reach the participants using the channel of close relatives. All interviews were conducted at a pre-arranged schedule in the yard of the participants' houses. No one was allowed to come to the interview place for privacy concern. The participants were provided with detailed descriptions of the aim and objectives of the research before commencing each interview. Written consent was taken from the participants before commencing the interviews.

Considering the social and cultural context of Bangladesh and to ensure comfortability of participants in talking about the research topic, the two female of authors SRF (who is a current female PhD student at the University of New England, Australia), and JA (completed Master's degree from the same institution) of this article conducted all interviews, as well as theorized with the HBM model by HK, SH, and SRF. Conducting the interviews by the female researchers indeed helped us to go into depth in our discussions with research participants.

Data were collected from January to March 2017 in two phases: In phase one, the quantitative phase of the study, the researchers conducted 122 interviews with migrant workers' wives who were residing in Chaudhagram Upazila of Cumilla district under the Chattogram division, Bangladesh. A structured questionnaire was used for conducting the survey to obtain participants' and their husbands' socio-demographic information, their (i.e. wives of migrant workers) perceptions and knowledge of HIV and feeling of risk to be infected by HIV. The survey data were analysed using SPSS software (version 19) by HK and SH.

In the second phase, considering the sensitivity of the research, the researchers (SRF and JA) also conducted nine unstructured, in-depth interviews with migrant workers' wives as a part of the qualitative approach. Since the resultant interviews led to data saturation, no further participants were approached to participate. For building rapport with the participants, the in-depth interview started with general questions regarding participants' daily activity and overall lifestyle. Then open-ended questions were used to explore the topics of interest which included cultural barriers to talk to their husbands about HIV as well as requesting them for HIV screening upon return, social stigma and imposed fear/shyness around HIV infection and transmission. The interviews (i.e. in-depth interviews) were audio recorded, and the recordings were transcribed verbatim into Bangla and then translated into English by the first author, as well as analysed thematically. Following transcription, data were reviewed by the authors HK and SRF, and a thematic analysis (followed by the interpretative lens) was performed to identify the themes. Specific themes (which may consist of

words, sentences, phrases, paragraphs or even entire documents) are used to interpret the data obtained through the in-depth interviews. For ethical consideration, the real names of the participants are kept confidential.

Results

Findings from the quantitative studies

The socio-demographic and economic profile reveals that half (50%) of the participants fall into the 18-23 age group, 8% were between the ages of 24-29 years old, 18 % were aged between 30-35 years old and 24% were aged 35 years old and above. The education profile showed that 63% of the participants had not reached secondary school level (class 6-10) and only 9% of participants had obtained a tertiary level of education. Therefore, the survey was read to participants who were illiterate (5%). Regarding the occupational status of the participants, 83% identified their occupation as 'housewife' (Table 1).

Table 1: Socio-demographic and economic profile of the participants (n=122)

Characteristics	Number	%
Age (in years)		
18-23	61	50
24-29	22	18
30-35	10	8
Above 35 years	29	24
Total	122	100
Education Status		
Illiterate	6	5
Can read & write only	34	28
Primary level (class 1-5)	37	30
Secondary level (class 6-10)	18	15
Higher secondary level (class 11-12)	16	13
Tertiary level	11	9
Total	122	100
Occupation		
Housewife	101	83
Teaching	9	7
Government service holder	5	4
Non-government service holder	7	6
Total	122	100

* *Decimals were rounded according to SPSS (version 19)*

Table 2 shows that 64% of the migrant workers did not reach secondary school level (class 6-10) of education, while only 11% achieved a tertiary level of education. These results are almost similar to the study's main participants (migrant workers' wives). In the case of the migrant workers' country of work, 82% were working in the Middle Eastern countries such as Saudi Arabia, the United Arab Emirates, Kuwait, and Qatar, whereas only 10% were stationed in Malaysia and the remaining

8% were stationed in Italy. Data regarding the duration of stay of the participants' husbands shows that the majority, 42%, lived abroad for 6-10 years.

Table 2: Background information about the migrant workers

Educational status	Number	%
Illiterate	7	6
Can read & write only	28	23
Primary level (class 1-5)	43	35
Secondary level (class 6-10)	21	17
Higher secondary level (class 11-12)	10	8
Tertiary level	13	11
Total	122	100
Country of work		
Saudi Arabia	67	55
Malaysia	12	10
The United Arab Emirates	16	13
Kuwait	6	5
Qatar	11	9
Italy	10	8
Total	122	100
Duration of husbands' overseas living stay in		
1-5 Years	43	35
6-10 Years	51	42
Over 10 years	28	23
Total	122	100

* Decimals were rounded according to SPSS (version 19)

Awareness/knowledge/perception of HIV/AIDS

An overwhelming majority (89%) said that they heard about HIV/AIDS where 85% had an understanding of how HIV/AIDS spreads. However, the study found a knowledge gap among the participants. For example, although 85% of the participants claimed they had knowledge on how HIV spreads, 10% of the participants perceived that the virus might transmit by physical contacts, such as hugging, 9% believed that sharing the clothes of a person living with HIV may transfer the virus and 5% thought that sweat could be a channel for HIV/AIDS transmission. These findings showed the misconceptions of the participants about the transmission of the virus. Additionally, a major portion of the participants (69%) believed that HIV/AIDS affected people should be managed by quarantining them, whereas 31% said that the affected people should be treated by maintaining social relationships. In terms of the most dominant sources of knowledge regarding HIV/AIDS, the mass media (such as radio, television, and newspaper) were reported mostly by 59%, while only 21% mentioned health workers as their information source (Table 3).

Table 3: Participants' knowledge on HIV/AIDS transmission

Have heard/shared about HIV/AIDS (n=122)	Number	%
Yes	109	89
No	13	11
Have knowledge on the ways HIV/AIDS spread (n=109)		
Yes	93	85
No	16	15
Dominant sources of knowledge on HIV/AIDS (n=109)		
Radio	17	16
Television	34	31
Newspaper	13	12
Book	7	6
Health worker	23	21
Peer group	9	8
Other	6	6
Perception of the mode of HIV/AIDS transmission (n=93)		
Polygamy	13	14
By hugging & touching HIV patients	9	10
Homosexuality	4	4
Transfusing blood of HIV infected people	7	8
Using the same syringe among the drug addicts	6	6
Using used clothes of HIV infected patients	8	9
From sweating	5	5
By unprotected sexual intercourse	22	24
By performing sex with sex worker	16	17
Others	3	3
Opinion on how HIV affected people should be treated (n=93)		
By quarantine	64	69
By maintaining social relationship	29	31

* Decimals were rounded according to SPSS (version 19)

As described in Table 4, 61% of the participants believed that their husbands would not be involved in unsafe sexual contact during their stay abroad. It is to be noted that instead of using 'illegal sexual contact,' the researchers intentionally used 'unsafe sexual contact' to decrease response bias. This response was consistent with their next item response, as 66% felt no risks of contracting HIV/AIDS upon their husbands' return. Another interesting finding is that 91% did not recommend their husbands seek HIV/AIDS screening upon their return. Of this 91%, one-fourth (25%) believed that there was a risk of contracting HIV through sexual intercourse with their returned spouses.

Our study found that 48% of the participants had no intention of asking nor had any interest in asking their husbands to use a condom, indicating that sexual intercourse is still male dominated where the women have fewer voices and choices. This could also be a reflection on the lack of awareness and lack of protective policies. In many countries, populations who are vulnerable do not have enough access to social protection and health services because of laws, regulations, policies, norms and practices that are vested on moral judgment instead of the principles of human rights

(UNAIDS, 2014). Moreover, norms of hegemonic masculinity, such as preference of men not to use condom during sexual intercourse because they perceive 'condoms' as the barrier to have real sexual pleasure, may influence high risk behavior by men, which result in the women being more vulnerable (Ahmed et al., 2017). Lastly, if the participants perceived themselves as vulnerable of being infected by HIV upon their husbands' return, a significant number of participants (41%) noted that they had no idea how to reduce the potential risks. However, 21% of the participants did mention that if their husbands (upon return) do *tawba* (religious corrections), they believed that the risk of HIV infection by their husbands could be reduced.

Table 4: Participants' perceptions on the chances of being infected by HIV/AIDS

Perceptions of husbands' chances of having unsafe sexual contact with other women while living in abroad (n=122)	Number	%
Husbands' chances of being involved in unsafe sexual activity while staying abroad		
Yes	31	25
No	74	61
Sometimes	17	14
Feeling of risk of being infected by HIV/AIDS due to sexual intercourse upon husbands' return from abroad (n=93)		
Yes	23	25
No	61	66
Sometimes	9	9
Intention to suggest husbands for HIV/AIDS screening upon their returning from abroad (n=93)		
Yes	6	6
No	84	91
Sometimes	3	3
Availability/Accessibility of condom (n=122)		
Yes	25	21
No	87	71
Sometimes	10	8
Intention to ask husbands to use a condom during sexual intercourse (n=122)		
Yes	35	29
No	59	48
Sometimes	28	23
Opinion on how risks (if there is any doubt) of being infected can be reduced upon the return of the husbands (n=93)		
By creating consciousness among the husbands regarding HIV/AIDS infections through media communications	23	25
Taking initiative by the government for mandatory HIV test for the husbands immediate after returning from abroad	12	13
Through religious correction (<i>tawba</i>)	20	21
Don't know	38	41
Opinion on the failure of available Bangladeshi media to create awareness of HIV infections (n=122)		

Yes	77	63	
No			21
Sometimes			17
			24
			20

* *Decimals were rounded according to SPSS (version 19)*

Although 59% of the participants mentioned media as their main information source (Table 3), 63% pointed towards media's failure in making them aware of HIV/AIDS. This result has a significant implication on the role of media in forming campaigns to increase awareness about HIV/AIDS.

Bivariate analysis

To understand the associations and significance of HIV/AIDS awareness and educational status, the role of media, the duration of husbands' staying abroad and access to information were measured as well as analysed by Chi-square and Cramer's V tests (Table 5).

Table 5: Summary tables of Chi-square (χ^2) and Cramer's V on awareness of HIV/AIDS and independent variables

Independent variables	HIV awareness		
	Hearing & sharing about HIV/AIDS	Knowledge on how HIV/AIDS spreads	Feeling of risk being infected by HIV/AIDS
Educational status	$\chi^2=49.65^{***}$ df=2	$\chi^2=56.75^{***}$ df=4	V = .59
Role of media	$\chi^2=28.12^{***}$ df=2	V=.45	$\chi^2=31.93^{***}$ df=4
Husbands' long duration of living in abroad	V=.29	$\chi^2=9.36^*$ df=4	$\chi^2=43.03^{***}$ df=4
Access to information	$\chi^2=23.18^{***}$ df=2	V=.53	$\chi^2=51.52^{***}$ df=4

[For χ^2 : * $P < .05$, ** $P < .01$, *** $P < .001$; for Cramer's V: below .10=weak relationship, .10 to .30=moderate relationship, above .30=strong relationship]

Bivariate analysis shows that the educational status of the participants is significantly related to the chances of hearing (from different sources) and sharing information (with husband) about HIV/AIDS infections [$\chi^2(2)=49.65$], and having knowledge on the ways of spreading HIV/AIDS [$\chi^2(4)=56.75$]. Moreover, the result from Cramer's V coefficient indicates the strong association between participants' education level and awareness of risks to contract HIV/AIDS. The results suggest that education is one of the prime factors that can increase the level of awareness of HIV/AIDS. The second hypothesis regarding the husbands' long period of staying abroad and increasing the possibility of their wives to be infected by HIV/AIDS were also found to be significantly correlated. However, husbands' period of staying abroad was found to be moderately associated with hearing and sharing about HIV/AIDS (Cramer's $V=.29$).

The third hypothesis assumed that more access to information regarding HIV/AIDS infections has a significant association with hearing and sharing attitudes between husband and wife about this issue and their feeling of risks. The result was consistent with the hypothesis, hearing about HIV/ AIDS, $\chi^2(2) = 23.18$, feeling of risk being infected by HIV/AIDS, $\chi^2(4) = 51.52$. It is concluded that access to information has a positive association with HIV/AIDS awareness that helps to ensure more sharing attitudes between husband and wife on HIV/AIDS. The result also shows a strong association between access to information and knowledge on how HIV/AIDS spreads, Cramer's $V = .53$. Finally, the fourth hypothesis assumed that there is a positive association between the quantity of the media message and the awareness level of HIV/AIDS. The result of the chi-square test was found statistically significant, hearing and sharing about HIV/AIDS, $\chi^2(2) = 28.12$, feeling of risk being infected by HIV/AIDS, $\chi^2(4) = 31.93$. Thus, it can be interpreted that the amount of media messages on HIV/AIDS were exposed to the participants' positive awareness on HIV/AIDS. The study has applied descriptive statistics to measure how the wives of migrant workers perceived HIV/AIDS apart from understanding the applicability of the HBM framework in the context of Bangladesh by testing the hypotheses. Overall, the test result shows that all four hypotheses were found statistically significant.

Findings from the qualitative studies

Table 6 shows the characteristics of nine participants who were purposively chosen for the in-depth interviews. Only one participant (A) had completed a tertiary level of education. Three participants (F, H, and I) had completed higher secondary (class 11-12) level of education. Similarly, three of the participants (A, H, & I) were engaged in different professions such as banker, primary school teacher and NGO worker, respectively, at the time of interview. The rest of the participants identified as housewives. Two participants (B, E) did not perceive any risk coming into sexual contact with their husbands upon their return, which indicates that they do not perceive the risks of contracting HIV and the benefit of remaining safe from HIV infections. Consequently, facing barriers (such as talking about HIV with their husbands and requesting their husbands to undertake HIV screening after returning from abroad) and cues to action (i.e. using the condom during sexual intercourse and remaining abstinent before undergoing HIV screening) are not applicable for them. Only two participants (A and I) mentioned facing a limited barrier in taking action or cues to action, however, they were determined to overcome the barriers in performing the action (i.e. participants A and I were found adamant to request their husbands for HIV screening before sexual contacts upon their return). Five participants noted that they will face barriers in terms of talking to their husbands about HIV as well as taking action to remain safe.

Table 6: Characteristics of the participants participated in the in-depth interviews by age, level of education, current job status, feeling of risks, perceived benefits, facing barriers, and cues to action

Participant	Age	Completion level of education	Current job status	Feeling of risks	Perceived benefits	Facing barriers	Cues to action
A	37	Tertiary	Banker	Yes	Yes	Limited	Yes
B	21	Primary	Housewife	No	No	N/A	N/A
C	33	Primary	Housewife	Yes	Yes	Yes	No
D	26	Secondary	Housewife	Yes	Yes	Yes	No
E	22	Can read and write only	Housewife	No	No	N/A	N/A
F	29	Higher secondary	Housewife	Yes	Yes	Yes	No
G	30	Higher secondary	Primary school teacher	Yes	Yes	Yes	No
H	24	Secondary	Housewife	Yes	Yes	Yes	No
I	27	Higher secondary	Works in an NGO	Yes	Yes	Limited	Yes

Discussion

From the quantitative phase of the study, it was found that only 9% of the participants completed a tertiary level of education, while a significant number (30%) completed the primary school level of education. The alarming situation is that 28% of the participants could read and write only. It is disquieting because the bivariate analysis (Table 5) showed that less educated migrant workers' wives were more vulnerable to HIV/AIDS transmission. One of the participants who was chosen for the in-depth interviews made the correlation between education and chances to be infected by HIV infections clearer. Participant A (age 37, completed the tertiary level of education, currently employed as a banker) said:

My husband is currently living in Malaysia. I must tell him to go for the HIV test upon return. It is true that asking my husband to go for HIV test would be a tough job for me since our family and the society do not accept the whole issue around HIV screening procedure easily. I might have the risk of being told by my husband whether I do trust him or not (A, Banker).

Being educated, participant A showed the courage of asking her husband to go for HIV screening (which means that she perceived the benefits of taking action, and she was also serious about it) if she feels that her husband could have sexual contact with other women while staying abroad. She also mentioned potential familial and social barriers (perceived barriers) regarding this.

Finally, she was determined about taking action (cues to action) by asking her husband to go for HIV screening after his return. Consequently, she is less vulnerable to be infected with HIV. On the other hand, participant B (age 21, completed a primary level of education, housewife) stated,

I did not hear anything about HIV/AIDS before. Therefore, I am scared of sharing anything about this virus with my husband even over the phone. I trust my husband (B, Housewife).

Participant B does not feel the risk of contracting HIV (from HBM perspective, she did not perceive the risk of being infected) because she has limited knowledge regarding HIV and how this virus is contracted and spread. In this case, if her husband carries HIV then she is under threat of contracting HIV as she mentioned that she trusted her husband. As she has only completed primary school level of education, therefore, she may not have had the opportunity to learn about HIV in an official capacity.

Another interesting aspect of the study was related to the occupational status of the wives of the migrant workers. In terms of occupation, 83% of the participants were housewives while only 7%, 4%, and 6% were primary school teachers, government service holders, and non-government service holders, respectively. It is worth noting that since an overwhelming majority of the participants were housewives, they might have a lack of access to information regarding HIV. For example, Participant C (age 33, completed primary school level of education, housewife) explained why she would not be able to ask her husband to go for HIV screening upon his return from abroad:

I am a housewife, fully dependent on my husband's income. If I ask my husband for HIV screening upon return, he would definitely react to it and I fear to be divorced (C, Housewife).

When undertaking this survey, the researchers found that 35% of the participants' husbands were staying abroad for 1-5 years, 42% for 6-10 years and 23% reported that their husbands were away from home for more than 10 years. Based on this information, the researchers constructed the important hypothesis that migrant workers' long period of working abroad increases the chances of their wives contracting HIV. This hypothesis was found to be statistically significant. It was postulated that staying abroad for such a substantial amount of time may increase the chances of the migrant workers engaging in extramarital sexual contact with paid sex workers. Since sex is a biological demand, both men and women have equal chances to be engaged in extramarital sexual activities. The concerning fact is that the migrant workers, potentially being less aware of HIV, have a greater chance of choosing to perform unsafe sex (i.e. without protection such as a condom), which puts them more at risk. Participants D, E, and F are highly vulnerable to HIV as they were unsure whether their husbands had unprotected sexual contact while living abroad. In this case, both husbands and wives are at risk of contracting HIV. Participant D (age 26, completed the secondary level of education, housewife) spoke about this concern:

Yes, sometimes I think that my husband might have the experience of having sex with other women in abroad because of being away from me for more than 8 years. But I have no idea whether he performs unsafe sexual activity (she mentioned about using the condom). Although I have heard about HIV, I think I will not able to talk to him about this issue because my husband will suspect me (D, Housewife).

Besides, the educational qualification of the migrant workers can be considered as an important indicator for the health safety of both husbands and wives. The research shows that the overwhelming majority of the participants' husbands (35%) have completed the primary level of education and only 11% of them are found whose husbands have completed the tertiary level of education. Knowing about HIV/AIDS and other STIs doesn't necessarily require higher educational qualifications; however, consciousness about HIV/AIDS among the participants as well as their husbands is required for maintaining a safe sexual union. The study shows that 29% of migrant workers are either illiterate or can read and write only. They can't read the book, leaflet, poster, and newspaper either. Thus, it can be argued that wives of these migrant workers are more vulnerable to HIV rather than other literate migrants. The participant E (age 22, can read and write only, housewife) whose husband did not have any formal education narrated:

My husband came last year for 3 months leave. I think my husband did not know about HIV. Since he preferred not to use the condom, I could not request for it. Yes, sometimes I think he might have sexual relationships with other women there. As he does not know anything about HIV, he may be infected by HIV (E, Housewife).

Moreover, the participant F (age 29, completed higher secondary level of education, housewife) shared:

To the best of my knowledge, my husband has heard about HIV/AIDS, but he never talked to me about this. Both of us felt shy to talk about this virus. Sometimes, I think I should talk to him, I do not feel confident to talk. He may misunderstand me (F, Housewife).

The study reveals that the majority of the participants (89%) have heard of HIV/AIDS. However, it can be argued that 11 % of the participants are at a higher risk due to the lack of knowledge about this virus. While the majority of the participants have heard about the virus, they lack correct knowledge about how HIV spreads. When the participants were asked about the process of how HIV/AIDS spreads, 24% of the participants believed that HIV could be transmitted via hugging, sharing clothes and sweat of the person living with HIV. These responses can be interpreted as knowledge gaps/misconceptions prevailing in the cognitive level among the participants. This finding is comparable to a research conducted by Aryal et al. (2016) in Nepal, which shares some similarities to Bangladesh regarding migration patterns. The study indicated that a significant number of the participants mentioned mosquito/fly bites, sharing the same clothes, toilet and kissing as the medium for HIV transmission (Aryal et al., 2016).

Even though some participants had proper knowledge about HIV, they mentioned they fear being physically assaulted if they talk to their husbands about the virus. Participant G (age 30, completed higher secondary level of education, primary school teacher) explained why she could not ask her husband to go for HIV screening upon his return:

My husband came to Bangladesh from Italy after 6 years. I wanted to ask him whether he had any kind of unsafe sexual relationship with any women there. But I could not ask because he may not expect/welcome this sort of question from me. More even, I had the chance to be assaulted physically by him (G, Primary School Teacher).

The study indicates that mass media such as television, radio and newspaper is the dominant sources of HIV/AIDS information for the participants. It is worth noting that the majority of the participants (31%) heard about this virus from television. A similar finding was revealed in a study conducted by Habib et al. (2000) where they found that 40.2% of the commercial sex workers received information on HIV from television. Since interventions through mass media may be useful in reducing the lack of knowledge on HIV/AIDS globally, because of the possibility of reaching a wider audience effectively (LeCroix, Snyder, Huedo-Medina, & Johnson, 2014), we postulate that television, as an audio-visual medium should be used to bring awareness to the people of Bangladesh. Participant H (age 24, completed the secondary level of education, housewife) shared her source of knowledge on HIV/AIDS:

Yes, I have seen an advertisement regarding HIV/AIDS on television. The advertisement was not so clear to me. I guess it is a serious virus. However, the ways it transfers and what to do to remain safe was not flawless to me. As no family members talk about HIV, I do not know too much about it. HIV is treated as a hidden disease (*gopon rog*) in our society. I would say if HIV is harmful and life-threatening then all of us should talk about it more openly (H, Housewife).

Therefore, media's active role should be encouraged with an aim to spread relevant and necessary information about how HIV/AIDS transmits and how vulnerable people can be protected. Additionally, educational institutions should be the starting point to make these rural and disadvantaged women aware of HIV/AIDS. However, it is quite unfortunate that students are not being taught in classrooms about how HIV spreads and ways of protecting their lives by overcoming their feelings of embarrassment/shyness. One of the participants reflected on her school life and reported that teachers usually avoided teaching the HIV/AIDS and STIs related chapter of the textbook. Instead, the teachers suggested they read the chapter by themselves at home. Participant I (age 27, completed higher secondary level of education, currently working in an NGO) said that:

During my school life, I found my teachers reluctant to teach on the HIV and STIs chapters. Moreover, the curriculum on HIV/AIDS is not enough and well designed to make us clear what this disease really means and in which possible ways it can spread/transmit (I, NGO Worker).

Talking about HIV is mostly taboo within the familial atmosphere due to the conservative nature of Bangladeshi society. There is an urgent need for conducting HIV/AIDS and STIs based education among the female population of the country whose husbands stay abroad.

Limitations and Strengths

Every empirical study has some inherent limitations. This study has also several limitations. First, the study relied solely on the 'perceptions' of the wives of migrant workers; therefore, the findings need to be interpreted with caution. For example, many of the participants reported that they had trust (that their husbands had no chance of being involved sexually with other women, such as sexual workers, during their working tenure in the foreign countries) in their husbands which resulted in their reluctance in asking their husbands for HIV screening upon return. In reality, their husbands could have been involved in unprotected sexual activity due to

lack of knowledge regarding HIV/STIs, and also for staying away for a long time. These perceptions may not reflect the reality. Second, the study findings were not derived from any medical examinations and therefore, the husbands' HIV status was unknown. Third, the study population was self-selected (purposive); therefore, results may be biased by age, level of education, and husbands' duration of staying in abroad. Fourth, the husbands of the study participants were not considered as interview subjects; therefore, husbands' perceptions and practices remained unexplored. The abovementioned limitations were mitigated by some strengths of this study. Using both quantitative and qualitative methods allowed the researchers to collect in-depth information. In addition, the in-depth interviews of the nine participants allowed the researchers to explore more details about this socially stigmatized virus, which is culturally termed, *gopon rog* (hidden disease). Moreover, through conducting the in-depth interviews, we indeed overcame the limitations of the survey data. For example, some sensitive questions were not possible to ask through the survey instrument, which was covered by the in-depth interviews. Considering, the sensitivity of the research in the social and cultural context of Bangladesh, where talking about HIV is still stigmatized and forbidden in many cases, the interviews were conducted by two female researchers so that participants felt comfortable.

Conclusions

The study found that the majority of participants were unaware and careless regarding HIV/AIDS and STIs which could make them vulnerable to contract the virus. In addition, although the participants feel the risk of HIV infection upon their husbands' return, they were reluctant to ask their spouses to undergo HIV testing before resuming sexual intercourse, due to social stigma, shyness, and fear of violence and divorce. If women wish to establish their expectations regarding HIV screening, the pervasiveness of patriarchal and hegemonic masculine ideologies (Ahmed et al., 2017; Kabir, 2015; Wahid, Kabir, & Khan, 2013), mean that they face several obstacles. The gendered power dynamics of Bangladesh, where women are subservient to men and are expected to be voiceless, limits women's engagement with their husbands. The society itself identifies men as the bread-earner and women as the bread-eater. Since women (especially rural women) are dependent on men's income, they are groomed from very early in childhood to conform to the norms of the "ideal wife". In the family life, the image of an ideal wife is constructed by her non-argument attitudes and voiceless behavior with husbands and other elder family members. They even have no right to determine their own sexual desires (when to engage in sexual activity and about how to keep safe during sex, i.e., using condoms) due to their economic disempowerment, sociocultural constructions of the ideal wife and lack of support from their own family (predominantly their parents). Besides, participants who are employed risk being considered as culturally deviant if they talk to their husbands about sexual vulnerability, since they are leaving the home for work.

The participants cannot be blamed for being silent regarding HIV risk because families and society have failed to create a favorable and friendly atmosphere where wives can share their feelings with their husbands. The participants also must not be liable for having incorrect or limited perceptions or knowledge of HIV/AIDS, given the risks involved for women. The state must take responsibility for making these rural and poorly educated women aware of this virus. Lastly, to our knowledge, this is the first study, which has used both quantitative and qualitative approaches to explore migrant workers' wives' perceptions of HIV/AIDS infections in Bangladesh. This study can be considered as a starting point for future researchers to explore additional empirical findings from different areas of the country.

Our research findings convey significant suggestions for policies and programmes directed at increasing migrant workers' wives' consciousness, voices and freedoms regarding HIV. The findings from the study suggest that (a) there is an urgent need for conducting HIV/AIDS and STIs-based education among both migrant male workers and their wives, including the elder members of the family so that no one (especially women) feels insecure, shy, and fearful talking to their husbands about these infectious diseases; (b) HIV/AIDS related programs should not only focus on the safe sex practices but also the socio-cultural barriers to HIV/AIDS, e.g., unequal power relationships in terms of sexual relationships between men and women, women's sexual rights, freedom, voices and so on; and (c) compulsory health education courses (taking into account varying levels of literacy) concentrating on HIV/AIDS and STIs, should be initiated targeting the migrant workers who intend to leave the country for work purpose. By doing this, they will be able to know about safe sex and the drawbacks of unprotected sexual practices during the period of staying abroad. Findings also suggest that (d) effective mass awareness programs on HIV/AIDS should be undertaken and launched through mass media, academic curricula and health workers so that people from every segment of society can be informed about the transmissions, consequences and protections from HIV/AIDS, again taking into account literacy and lack thereof.

Additionally, considering the cultural context, female health workers should be employed to provide women with information both on safe sex practices, but also how to communicate their needs with their husbands. Additionally, (e) urgent steps need to be taken by relevant ministries (such as the ministry of women and children affairs, ministry of health and family welfare, ministry of communications, ministry of education and ministry of labour and employment) to promote the social acceptability of condom use during sexual intercourse and ensure adequate supply and access; (f) strengthening mechanisms for collaboration and coordination among government, nongovernment organizations, development partners and other relevant stakeholders to eliminate stigma around HIV and discrimination against those infected by HIV through appropriate advocacy, policies and related effective measures; and (f) lastly, ensuring a conducive environment so that women can raise their voices and have the right to decide on safe sex practices if they feel that there is a threat of being infected by HIV from their husbands. Husbands should maintain regular communication with their wives from the foreign countries to grow mutual respect and love, and to avoid loneliness.

Appendix:

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References

- Agadjanian, V., & Markosyan, K. (2017). Male labor migration, patriarchy, and the awareness-behavior gap: HIV risks and prevention among migrants' wives in Armenia. *AIDS care*, 29(6), 705-710.
- Aryal, N., Regmi, P. R., Teijlingen, E. V., Dhungel, D., Ghale, G., & Bhatta, G. K. (2016). Knowing is not enough: Migrant workers' spouses vulnerability to HIV. *SAARC Journal of Tuberculosis, Lung Diseases and HIV/AIDS*, 13(1), 9-15.
- Asaduzzaman, M., Higuchi, M., Sarker, M. A. B., & Hamajima, N. (2016). Awareness and knowledge of HIV/AIDS among married women in rural Bangladesh and exposure to media: a secondary data analysis of the 2011 Bangladesh demographic and health survey. *Nagoya Journal of Medical Science*, 78(1), 109.
- Bangladesh Bureau of Statistics. (2015). International migration from Bangladesh: socio-economic and regional characteristics. Retrieved from: http://203.112.218.65:8008/WebTestApplication/userfiles/Image/PopMonographs/Volum e-3_IMB.pdf (Accessed 9 July 2018)
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* Hillsdale, NJ: Lawrence Earlbaum Associates, 2.
- Davies, A. A., Borland, R. M., Blake, C., & West, H. E. (2011). The dynamics of health and return migration. *PLoS Medicine*, 8(6), e1001046.
- Etzold, B., & Mallick, B. (2015). International migration from Bangladesh. Retrieved from: <http://www.bpb.de/gesellschaft/migration/laenderprofile/216104/international-migration-from-bangladesh> (Accessed: 17 March 2018).
- Gazi, R., Parveen, S., & Kabir, H. (2009). Risk behaviour network and vulnerability to HIV infection of migrant female sex workers in Teknaf, Bangladesh. *Pakistan Journal of Women's Studies*, 16, 55-70.
- Golobof, A., Weine, S., Bahromov, M., & Luo, J. (2011). The roles of labor migrants' wives in HIV/AIDS risk and prevention in Tajikistan. *AIDS Care*, 23(1), 91-97.
- Habib, S. E., Amanullah, A. S. M., Daniel, A., & Lovejoy, F. H. (2000). Risking the future: Unprotected intercourse and HIV/AIDS knowledge among female commercial sex workers in central Bangladesh. *International Quarterly of Community Health Education*, 20(3), 265-280.
- Haider, M., Ahmed, S. N., & Jaha, N. K. (2008). Bangladesh HIV/AIDS communication challenges and strategies. *Bangladesh Medical Research Council Bulletin*, 34, 54-61.
- Hasan, M. T., Nath, S. R., Khan, N. S., Akram, O., Gomes, T. M., & Rashid, S. F. (2012). Internalized HIV/AIDS-related stigma in a sample of HIV-positive people in Bangladesh. *Journal of Health, Population, and Nutrition*, 30(1), 22-30.
- Hossain, M., Mani, K. K., Sidik, S. M., Shahar, H. K., & Islam, R. (2014). Knowledge and awareness about STDs among women in Bangladesh. *BMC Public Health*, 14(1), 775.
- Huq, N. L., & Chowdhury, M. E. (2012). Assessment of the utilization of HIV interventions by sex workers in selected brothels in Bangladesh: an exploratory study. *The Qualitative Report*, 17(19), 1-18.
- Islam, M. S. (2014). Destitute children and initiatives for their welfare in Bangladesh. *International Journal of Social Science*, 3(4), 403-413.
- Islam, M. M., Conigrave, K. M., Miah, M. S., & Kalam, K. A. (2010). HIV awareness of outgoing female migrant workers of Bangladesh: A pilot study. *Journal of Immigrant and Minority Health*, 12(6), 940-946.

- Jesmin, S. S., & Cready, C. M. (2016). Community influences on married women's safer sex negotiation attitudes in Bangladesh: A multilevel analysis. *Archives of Sexual Behavior*, 45(2), 383-393.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.
- Kabir, H. (2015). Hegemonic masculinity and contraceptive use prevalence among the males of Bangladesh: A case study on Dhaka city. *Social Science Review [The Dhaka University Studies, Part-D]*, 32(2), 55-66.
- Kamal, S. M. (2012). Vulnerable sexuality and HIV/AIDS prevention knowledge among ethnic tribal male youth in Bangladesh. *Sex Education*, 12(2), 127-145.
- LaCroix, J. M., Snyder, L. B., Huedo-Medina, T. B., & Johnson, B. T. (2014). Effectiveness of mass media interventions for HIV prevention, 1986–2013: a meta-analysis. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 66, S329-S340.
- Lurie, M. N., Williams, B. G., Zuma, K., Mkaya-Mwamburi, D., Garnett, G. P., Sweat, M. D., ... & Karim, S. S. (2003). Who infects whom? HIV-1 concordance and discordance among migrant and non-migrant couples in South Africa. *Aids*, 17(15), 2245-2252.
- Mondal, N. I., Takaku, H., Ohkusa, Y., Sugawara, T., & Okabe, N. (2009). HIV/AIDS acquisition and transmission in Bangladesh: turning to the concentrated epidemic. *Japanese Journal of Infectious Diseases*, 62(2), 111-119.
- Orji, R., Vassileva, J., & Mandryk, R. (2012). Towards an effective health interventions design: an extension of the health belief model. *Online Journal of Public Health Informatics*, 4(3).
- Qin, Q. R., Ji, G. P., Xu, J., Jiang, Q. C., Hong, H., Chu, X. Y., & Ye, D. Q. (2009). Risk of sexual HIV transmission among wives left behind and wives of nonmigrant men in rural areas of China. *Journal of the Association of Nurses in AIDS Care*, 20(4), 308-315.
- Rai, T., Lambert, H. S., Borquez, A. B., Saggurti, N., Mahapatra, B., & Ward, H. (2014). Circular labor migration and HIV in India: Exploring heterogeneity in bridge populations connecting areas of high and low HIV infection prevalence. *The Journal of infectious diseases*, 210(suppl_2), S556-S561.
- Ranjan, A. (2013). HIV prevalence and awareness among wives of rural migrant workers of Muzaffarpur district in Bihar, India (Doctoral dissertation, UCLA). Retrieved from: <https://escholarship.org/uc/item/0z1866nx> (Accessed: 19 July 2018).
- Ranjan, A., Bhatnagar, T., Babu, G. R., & Detels, R. (2017). Sexual behavior, HIV prevalence and awareness among wives of migrant workers: results from cross-sectional survey in rural North India. *Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine*, 42(1), 24.
- Rosenstock, I. M. (2005). Why people use health services. *The Milbank Quarterly*, 83(4), 1-32. Risking the future: Unprotected intercourse and HIV/AIDS knowledge among female commercial sex workers in central Bangladesh
- Shah, S. A., Khan, O. A., Kristensen, S., & Vermund, S. H. (1999). HIV-infected workers deported from the Gulf States: impact on Southern Pakistan. *International journal of STD & AIDS*, 10(12), 812-814.
- Sheikh, M. T., Uddin, M. N., & Khan, J. R. (2017). A comprehensive analysis of trends and determinants of HIV/AIDS knowledge among the Bangladeshi women based on Bangladesh Demographic and Health Surveys, 2007–2014. *Archives of Public Health*, 75(1), 59.

- Sheeran, P., & Abraham, C. (1996). The health belief model. *Predicting Health Behaviour*, 2, 29-80.
- Thapa, S., Bista, N., Timilsina, S., Buntinx, F., & Mathei, C. (2014). Social and behavioural risk factors for HIV infection among the wives of labour migrants in Nepal. *International Journal of STD & AIDS*, 25(11), 793-799.
- Ahmed, M. U., Kabir, H. & Fatema, S. R. (2017). Hegemonic masculinity and sexual behavior among the university and madrasah students in Bangladesh. *Social Science Review [The Dhaka University Studies, Part-D]*, 34(1), 229-46.
- Uddin, M. J., Sarma, H., Wahed, T., Ali, M. W., Koehlmoos, T. P., Nahar, Q., & Azim, T. (2014). Vulnerability of Bangladeshi street-children to HIV/AIDS: a qualitative study. *BMC Public Health*, 14(1), 1151.
- Ullah, A. K. M. (2005). Prostitution in Bangladesh: an empirical profile of sex workers. *Journal of International Women's Studies*, 7(2), 111-122.
- UNAIDS. (2014). The gap report. Retrieved from: http://files.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2014/UNAIDS_Gap_report_en.pdf (Accessed: 4 September 2018).
- UNAIDS (Factsheets-global AIDS Update). (2019a). 2018 global HIV statistics. Retrieved from: http://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf (Accessed: 31 August 2019)
- UNAIDS. (2019b). 2018 country factsheets Bangladesh. Retrieved from: <http://www.unaids.org/en/regionscountries/countries/bangladesh> (Accessed: 31 August 2019).
- UNDP. (2008). HIV vulnerabilities of migrant women: from Asia to the Arab States. Retrieved from: <https://www.refworld.org/pdfid/4a097c8f2.pdf> (Accessed: 13 February 2019).
- Wahid, Z. H., Kabir, H., Khan, T. H. (2013). Globalization of women trafficking and sex tourism in Bangladesh: a neglected discourse. *Social Science Review [The Dhaka University Studies, Part-D]*, 30(1), 87-98.
- Yeasmin, S., & Rahman, K. F. (2012). Triangulation research method as the tool of social science research. *BUP Journal*, 1(1), 154-163.
- Zuma, K., Gouws, E., Williams, B., & Lurie, M. (2003). Risk factors for HIV infection among women in Carletonville, South Africa: migration, demography and sexually transmitted diseases. *International journal of STD & AIDS*, 14(12), 814-817.