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REVIEW ARTICLE IN
INFECTIOUS DISEASES

Gender and HIV/AIDS in Bangladesh: A review

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Abstract

Introduction: The HIV/AIDS epidemic portrays a growing health threat in the world. In Bangladesh, the prevalence rate of HIV/AIDS is not yet high but it is gradually becoming a threat especially for women and young girls due to gender disparity. This systematic review was conducted to explore the gender-specific vulnerability to HIV/AIDS in Bangladesh in order to suggest to policy makers the best way for the prevention of HIV/AIDS in Bangladesh as well as in other low income countries.

Methods: Peer review articles were identified using a systematic search of two databases: Pubmed and Goggle Scholar. The search was limited to studies published in English between 1998 and 2016 and included a special focus on articles addressing the gender-specific risk factors to HIV/AIDS.

Discussion and Conclusion: This paper analyzes how women and girls in marginalized position in the society fall victim to HIV/AIDS due to gender disparities and other related issues. The findings of the study indicate that women and young girls are the most vulnerable to HIV/AIDS infection among the general people. Along with biological susceptibility, other major causes of this vulnerability of women and girls are gender inequality, sexual abuse and violence, social stigma, inability to decision making power, economic dependency and men's sexual power and privilege over women. This paper helps policy makers and invites them to take special care to reduce gender inequality before implementing any policy for the prevention of HIV/AIDS in Bangladesh as well as in low income countries.

KEY WORDS: HIV/; AIDS; social determinants of health; vulnerable populations; women's health; sex workers.

Riassunto

Introduzione: L'HIV rappresenta un pericolo crescente per la salute delle persone di tutto il mondo. In Bangladesh, il tasso di prevalenza dell'HIV e dell'AIDS non è ancora alto, ma sta crescendo gradualmente, rappresentando una minaccia specialmente per le donne e per le giovani donne a causa della disparità di genere. Questa revisione sistematica della letteratura è stata condotta con l'obiettivo di esplorare la vulnerabilità all'infezione da HIV/AIDS in Bangladesh determinata dalla disparità di genere, con la finalità di suggerire ai politici la via migliore per futuri programmi di prevenzione dell'HIV/AIDS in Bangladesh, cosi come in altri Paesi a basso reddito.
Metodi: Sono stati identificati gli articoli scientifici sottoposti a peer review attraverso una ricerca sistematica effettuata su due database: Pubmed e Goggle Scholar. La ricerca è stata circoscritta agli articoli pubblicati in inglese tra il 1998 ed il 2016 e si è concentrata in particolar modo sugli studi che affrontavano i fattori di rischio per l'HIV/AIDS dal punto di vista della differenza di genere.
Discussione e Conclusione: Questo studio ha analizzato come la disparità di genere e le altre problematiche correlate pongano le donne e le ragazze in una posizione marginale della società favorendo l'infezione da HIV. I risultati dello studio indicano che nella popolazione generale le donne e le giovani donne sono le più vulnerabili all'infezione da HIV. Insieme alla suscettibilità biologica, le altre maggiori cause di tale vulnerabilità sono rappresentate dalla disuguaglianza di genere, dall'abuso e dalla violenza sessuale, dallo stigma sociale, dallo scarso potere decisionale, dalla dipendenza economica, dal potere e dal privilegio sessuale dell'uomo sulla donna. Questo lavoro è di supporto per i politici e li invita a prestare molta attenzione al fine di ridurre la disuguaglianza di genere prima di implementare ogni politica per il miglioramento della prevenzione dell'HIV/AIDS, in Bangladesh cosi come in altri Paesi a basso reddito.

TAKE-HOME MESSAGE

Women and young girls are the most vulnerable to HIV/AIDS infection among the general people. It's urgent to reduce gender inequality before implementing any policy for the prevention of HIV/AIDS in Bangladesh as well as in other low income countries.

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INTRODUCTION

In the mid-1980s AIDS was recognized as a global health crisis [1]. According to WHO, since the beginning of the epidemic, more than 70 million people have been infected with the HIV virus and about 35 million people have died of HIV. Globally, about 36.7 million (34.0–39.8 million) people were living with HIV at the end of 2015 [2]. Certain population groups such as young people, women and girls are shown to be at higher risk of contracting HIV and/or of having to deal with the consequences of HIV and AIDS. Every year there are almost 380,000 (340,000 – 440,000) new HIV infections among adolescent girls and young women (aged 10–24 years) around the world [3]. The vast majority of people living with HIV are in low- and middle-income countries and Sub-Saharan Africa is the most affected region. The first reported case of HIV occurred in 1981, but the first case of HIV/AIDS in Bangladesh was detected in 1989. Although it is still considered to be a low prevalence country, Bangladesh remains extremely vulnerable to an HIV epidemic, given its poverty, overpopulation, gender inequality and high levels of transactional sex [4]. In Bangladesh, it is estimated that without any intervention the prevalence in the general population could be high as 2% in 2012 and 8% by 2025 [5]. Nowadays, among general population the prevalence rate of HIV is less than 0.1% [6]. While the overall prevalence for HIV is low in general population, it is high amongst injecting drug user (IVDUs) and currently stands at 7% (in Dhaka) [7]. According to a report of National AIDS Spending Assessment-Bangladesh (NASA), the number of people living with HIV/AIDS in Bangladesh is 8,000. Moreover, in 2012 among the new infected HIV cases 35% were women and among them 6% were children less than 15 years old [8]. Another study conducted by the World Bank and United Nations Joint Program on HIV/AIDS (UNAIDS) reported that Bangladesh, between 2001–2011, was one of the four countries in Asia where the incidence rate of HIV infection had been increasing (> 25%) among adults 15–49 years old [9]. People believe that Bangladesh is HIV risk-free for its religious lifestyle, because of the low prevalence rate of HIV/AIDS is this country, but that's wrong. Multiple risk factors make Bangladesh vulnerable to HIV/AIDS. Indeed, there is low knowledge on most important risk factors such as low use of condoms, keeping several sexual partners at the same time, frequent incidents of sexually transmitted diseases (STDs), weak blood transmission system and the presence of HIV in neighboring countries i.e. India, Nepal and Pakistan [10]. Moreover, in Bangladesh different residential hotels, seaports, tourist places, and slum areas are some key places of sex trafficking of women and girls [11]. Throughout the country approximately half a million men everyday meets with sex workers. Garments workers, truck drivers and rickshaw pullers are three risk groups who are frequently involved in illegal and unsafe sex [12]. Premarital and extramarital sexual relationships also exist in the society, but Bangladeshis people don't open their eyes. Moreover, because of globalization, in a similar way to some western countries, homosexuality and lesbian relationships are common phenomena in different urban part of Bangladesh, especially in Dhaka; these places are mostly prisons, student's hostel, bus stations, slums, labor colonies, barracks, and dormitories and so on [11]. Here, homosexuality is an important risk factor for HIV/AIDS because of the lack of mass awareness campaign in order to address HIV/AIDS. Sexually transmitted diseases (STDs) are another risk factor for spreading HIV/AIDS. In Bangladesh, sex workers (SWs), clients of sex workers, injecting drug users (IDUs), male sex with male (MSMs), truck drivers and rickshaw pullers are mostly responsible for this risk factor [13]. It is estimated that there are about 25,000 IDUs in Dhaka, Rajshahi, Sylhet and other urban areas in Bangladesh [11, 14]. Generally, STDs affect IDUs to a great extent because of the sharing the same needles while injecting drug into their body. In Bangladesh, IDUs have the highest prevalence rate of HIV/AIDS

(7%), according to the serological surveillance conducted in 2006. Apart from some special groups such as IDUs, MSMs, SWs, also Bangladeshis women from the general population are vulnerable to HIV/AIDS infection. Woman is four times more likely to contract HIV/AIDS than man [4], because male-dominated society always neglects women's right and social status. Women also deprived from proper education, employment opportunities, health care that contribute to decrease their decision making power in the society. Moreover, they are often subject to early marriage, sexual abuse and violence in the society. Women also face cultural and religious barrier in every sphere of their life, i.e. fail to negotiate their spouse/partners who may have unprotected sex and to be involved in unsafe sex may expose to HIV/AIDS infection. The aim of this review is to explore the gender-specific vulnerability to HIV/AIDS in Bangladesh in order to suggest to policy makers the best way for the prevention of HIV/AIDS in Bangladesh as well as in other low income countries.

MATERIALS AND METHODS

Peer review articles were identified using a systematic search of two databases: Pubmed and Goggle Scholar. The search was performed using the following key words: Bangladesh; women; HIV/AIDS; Sex Workers (SWs), Injecting Drug Users (IDUs), Male Sex with Male (MSMs), Commercial Sex Workers (CSWs). Clinical trials, reviews, meta-analyses, letters, editorials, and practice guidelines were all considered. The search was limited to studies published in English between 1998 and 2016 and included a special focus on articles addressing the gender-specific risk factors to HIV/AIDS. We read through the abstracts and selected relevant articles from 116 search results. A total of 49 articles on the Bangladeshi women's vulnerability to HIV/AIDS and their level of HIV knowledge were selected for full review. Moreover, recent estimates and data on the women's vulnerability in the world were obtained from websites of international agencies such as UNAIDS.

WOMEN AND HIV/AIDS AROUND THE WORLD

Since the start of the global HIV epidemic, in many regions, women have remained at a much higher risk of HIV infection than men. Young women and adolescent girls in particular, account for a disproportionate number of new HIV infections among young people living with HIV [15]. Worldwide, women constitute more than half of all people living with HIV. For women in their reproductive years (ages 15–49), HIV/AIDS is the leading cause of death [16]. In 2013, there were an estimated 380,000 new HIV infections among young women aged 15 to 24 accounting for 60% of all new HIV infections among young people. 80% of all young women living with HIV live in sub-Saharan Africa [3]. In 2014, almost 62% of all new HIV infections among adolescents occurred among adolescent girls. Moreover, HIV remains the leading cause of death among women of reproductive age, yet access to HIV testing and treatment remains low [15]. Women are more vulnerable to HIV biologically, epidemiologically, and socially. Biologically, semen contains a much higher concentration of HIV than does vaginal secretions and female reproductive anatomy makes a woman more highly susceptible to contracting sexually transmitted disease (STDs) in comparison to men. Epidemiologically, women are more vulnerable to HIV than men because they tend to have sex with, or marry, older men and men are more likely to have had more sexual partners than women. Socially, women are more vulnerable because they are expected to be more passive partner in sexual relationships. The degree of gender social roles (female submissiveness, expectations of male sexual activity/freedom and household position) vary according to cultural, racial, and religious heritage [17]. In the US, the proportion of AIDS diagnoses reported among women has more than tripled since 1985. The vast majority of women diagnosed with HIV (86%) contracted the virus through heterosexual sex and Black/African American and Hispanic/Latina women continue to be disproportionately affected by HIV, compared with women of other ra-

ces/ethnicities [18]. In developing countries, causes are gender inequality and intimate partner violence that prevents many women, particularly young women, from protecting themselves against HIV [3], lack of access to healthcare services because stigma and discrimination create additional barriers [19], lack of access to education [20, 21], lack of recognition under the law and legal restrictions [22]. In Sub-Saharan Africa (SSA), where women bear the brunt of the HIV epidemic [22], the disproportionate impact of the HIV epidemic on women can be attributable to several factors including those biological, social, behavioral, cultural, economic and structural [23]. AIDS is the leading cause of death among adolescents in Africa and the second leading cause of death among adolescents globally. Adolescent girls and young women are disproportionately affected by HIV in SSA, particularly in countries with high HIV prevalence. In SSA, 7 in 10 new infections in 15–19 year olds are among girls [24]. A systematic review of the intersection of intimate partner violence against women and HIV/AIDS indicated complex but real relationship between two epidemics threatening the health and safety of women in the US and around the world, particularly among low- and middle-income countries. Mechanisms by which the risk is increased were forced sex with an infected partner; limited or compromised negotiation of safer sex practices and the increased sexual risk-talking behaviors; moreover, the increase in other STDs that accompany abuse may facilitate HIV transmission [25]. According to UNAIDS [3], almost all of the countries of the world, the afflictions rate of HIV/AIDS are higher among women especially young women than men except some developed countries (see Table 1). The inherent causes of this affliction are so called "social construction of gender disparities" and "male-domination over female" in the world.

Table 1. Difference between young men and young women (aged 15–24 years) living with HIV in 2013 [3].

Regions and Countries	**Women**	**Men**	**Regions and Countries**	**Women**	**Men**
Sub-Saharan Africa			**Asia and the Pacific**		
Angola	1.2-1.8	0.6 -1.1	Bhutan	0.1- 0.5	≤ 0.1- 0.4
Benin	0.4 -0.5	0.2-0.3	Indonesia	0.5-0.9	0.4-0.9
Botswana	6.0-7.4	3.5-5.0	India	≤ 0.1 - 0.2	≤ 0.1 - 0.2
Cameroon	1.9-2.3	1.0 -1.5	Bangladesh	≤ 0.1 - ≤ 0.1	≤ 0.1- ≤ 0.1
Chad	0.9 -1.2	0.5-0.7	Myanmar	0.3 -0.3	0.2 - 0.4
Burkina Faso	0.5 - 0.6	0.4 - 0.5	Cambodia	0.2- 0.3	0.2 -0.2
Nigeria	1.3-1.6	0.7-1.0	Pakistan	≤ 0.1 - ≤ 0.1	≤ 0.1- 0.2
Rwanda	1.2- 1.4	0.9- 1.1	Thailand	0.3 - 0.4	0.3 - 0.6
Sierra Leone	0.6-1.0	0.3 - 0.5	Malaysia	≤ 0.1 - ≤ 0.1	0.2-0.2
Central African Republic	1.5-1.9	0.9-1.2	**Eastern Europe and Central Asia**		
Ethiopia	0.5-0.6	0.4-0.5	Georgia	≤ 0.1-0.1	0.3- 0.4
Congo	1.2 -1.5	0.7 - 0.9	Belarus	0.5- 0.6	0.3-0.4
Gabon	1.9- 2.6	0.4-0.7	Ukraine	0.4- 0.6	0.1 -0.2

Kenya	2.8 -3.4	1.7-2.3	Latin America		
Lesotho	10.5-12.8	5.8 -8.3	Belize	0.6 - 0.9	0.6 -1.0
Malawi	3.8-4.6	2.4 -3.3	Brazil	0.2 - 0.2	0.4 -0.6
Mozambique	6.1-7.4	2.7- 3.6	Guyana	0.9 - 1.8	0.6 -1.4
Namibia	4.8-6.7	2.7- 4.2	Paraguay	0.2 -0.5	0.3 - 0.8
South Africa	13.1- 16.1	4.0 - 5.9	El Salvador	0.3 -0.7	0.2 - 0.6
Swaziland	12.4 -14.8	7.2 - 10.2	Colombia	0.2 - 0.2	0.3 - 0.5
Zimbabwe	6.6 -7.9	4.1 - 5.6	**Western and Central Europe**		
Zambia	4.5 - 5.4	3.4 - 4.8	Estonia	0.5-0.8	0.8 -1.2
Caribbean and North America			UK	0.1 -0.2	0.2 -0.3
Bahamas	1.9 -2.4	1.4 -1.7	Spain	≤ 0.1 - ≤ 0.1	0.1- 0.2
Haiti	0.9 -1.1	0.6 -0.7	Italy	≤ 0.1 - ≤ 0.1	0.1-0.1
Trinidad and Tobago	0.9 -1.2	0.6 - 0.7	**Middle East**		
Jamaica	0.6 - 0.8	0.9 - 1.4	Sudan	0.2 - 0.3	0.1 -0.3
Nicaragua	≤ 0.1- 0.1	0.1- 0.3	Somalia	0.2- 0.4	0.2 - 0.3
Mexico	≤ 0.1- ≤ 0.1	0.1- 0.3	Yemen	≤ 0.1- ≤ 0.1	≤ 0.1- ≤ 0.1
Dominican Republic (the)	0.2- 0.3	0.2- 0.3	Iran(Islamic Republic of)	≤ 0.1- 0.2	0.1-0.3
Panama	0.3- 0.3	0.4- 0.6	Egypt	≤ 0.1- ≤ 0.1	≤ 0.1- ≤ 0.1
Cuba	0.1- 0.1	0.2- 0.3	**Global**	**0.4 - 0.5**	**0.3- 0.3**

WOMEN'S VULNERABILITY TO HIV/AIDS IN BANGLADESH

Alike the current global trend, women in Bangladesh envisage a greater risk of HIV/AIDS infection and mortality compared to men [26]. According to a report of UNICEF (2012) the prevalence rate of HIV infection among women was 2.7 against total prevalence of 3.1 per 10, 000 people. Along with physical susceptibility to the infection of HIV/AIDS, lack of socio-economic opportunity and gender inequality are liable for this higher rate of HIV/AIDS affliction among women in Bangladesh [27]. Moreover, gradual decline of religious morality, illiteracy and patriarchal domination over women create the great threat of severe vulnerability of HIV/AIDS to women. According to a research conducted on high-risk populations for HIV in Bangladesh, IDUs have the highest prevalence rate of HIV transmission, followed by female sex workers (FSWs), clients of sex workers, and men who have sex with men [28]. Our review shows that most surveys aimed to explore relationship between HIV/AIDS and commercial and female sex workers, FSWs and their clients are important sources of spreading HIV/AIDs in Bangladesh. In a survey carried out in Rajshahi City, more than 88% of FSWs reported practicing unprotected sex, because of clients' insistence [14]. In addition, majority of CSWs did not

use condom during sex with their clients [29]. In a recent study, 47% of the clients were suggests to use condom during last sexual intercourse and only 21% agreed to do so. Especially higher educated, unmarried, hotel-based and higher HIV knowledgeable FSWs convinced clients to use condom. However, FSWs had very little control over their profession [30]. In a survey of 2008, condom use was low among the female regular sex partners and primarily associated with women exhibiting risks practices. Moreover, a fourth of the participants have not heard about HIV/AIDS and only 17% have been tested for HIV [31]. Rukhsana et al. found that boatmen are at high risk of contracting HIV infection through sexual intercourses with CSWs and IDUs in Teknaf boarder area that connect Bangladesh and Myanmar, a country experiencing a generalized HIV epidemic. Therefore, there is a great potential for boatmen infected with the virus to spread HIV to their spouses and other sexual partners (both male and female) in their communities [32]. High-risk heterosexual contact, especially among commercial sex workers (CSWs), is a major mode of transmission. In a survey carried out in Daulatdia brothel, one of the largest river ports in Bangladesh, HIV/AIDS was viewed by most of 300 CSWs as a remote threat, over-riden by immediate economic and survival concerns. Only one-third of sex-acts on the last day of work were protected through condom use. CSWs who were married, had been a CSW for less than 5 years, were with a new client, or had two or more clients in last working day reported significantly higher condom use. Client dissatisfaction was the major reason for not using condoms [33]. In a survey conducted in Narayangonj, 20 Km from the capital Dhaka, only 18% of the respondents had heard about AIDS [34]. These findings are consistent with the high prevalence of STD's in Bangladesh because of high-risk sexual activity occurring outside marriage [35] and high level of premarital sexuality which is very common in Bangladesh, for males especially [36]. Bangladesh is one of the conduits of the 'Golden Triangle'; hence, heroin is quite easily available [37]. IDUs in Bangladesh are most vulnerable groups to the infection and spread of HIV/AIDS among general people due to lack of awareness and knowledge about HIV/AIDS and practice of risk behaviors i.e. high level of needles/syringes sharing, and unprotected sex [13]. Female IDUs in Bangladesh are at risk of major HIV epidemic from both injection sharing and sexual risk behaviors and sex worker IDUs appear especially vulnerable once HIV enter this community. The female IDUs are likely to bridge the epidemic to the general population [38]. Understanding substance-use-related concerns among women is important for effective HIV prevention. A review has identified four main themes: (a) opioid use and injecting drug use in women, (b) alcohol use in sex work settings, (c) sexual transmission of HIV from male-injecting drug users (IDUs) to their regular female sex partners, and (d) sexual violence among female partners of substance-using men [39]. In a study investigating the most important risk factors for HIV/AIDS in Bangladesh, poverty and bias against women i.e. exclusion from social, economic and legal rights heighten the vulnerability of this group of people in Bangladesh [10]. Moreover, ignorance, illiteracy, superstition, poverty, rape violence, unemployment, high prevalence of HIV infection in the neighboring countries cause the infections of HIV. The incidence of vulnerable sex workers among the women of Bangladesh and female emigrants returning from abroad or departing immigrants are important factors in increasing the risk of HIV/AIDS at an alarming rate [40]. In a survey of Martin et al., male patients who were HIV positive over 70% were returning to migrants workers from oversee especially Middle East countries. The proportions of men who reported sex with female sex workers were 51% [41]. The sexual risk behavior of married men living away from home may put themselves and their wives at risk for HIV infection. A cross-sectional survey was performed on random samples of 1,175 married women and 703 married men in 2 rural

areas of Bangladesh; extramarital sex was reported by 64.2% of 296 men and 8.6% women who had lived apart from their spouse [42]. A study based upon returning migrant workers and spouses revealed that the majority of those who tested positive were aged 25–44 (71%), male (70%), and married (68%) [43]. Moreover, lack of public awareness of HIV/AIDS, misconceptions about diseases, high risk behaviors are liable for the infection of HIV/AIDS and Bangladesh's proximity of India and Myanmar (high endemic of HIV regions) also increase fear of spreading HIV widely [35]. According to a recent survey, FSWs and female prisoners experience elevated HIV prevalence compared to the general population because of unprotected sex and unsafe drug use practice. Female prisoners are much more likely to have a drug problem compared with male prisoners and have higher HIV prevalence, yet are less likely to have access to HIV preventions and treatment in prison [44]. Several studies have highlighted the limited knowledge about HIV/AIDS that may also contribute to the spread of the HIV virus in Bangladesh. This low level of public knowledge is likely due, in part, to the fact that there has been little information on AIDS and STDs presented in the mass media [35]. Low level of awareness and knowledge about HIV/AIDS was found among rural married women in Bangladesh [45]. In a survey, HIV knowledge among the potential female migrant worker seemed to be poor and television and health workers were the major sources of HIV related knowledge [46]. In a study on male and female garment workers, Hasan et al. found that most of the garment workers (76.9%) had poor awareness about HIV/AIDs. Only 10% had good knowledge. Men compared to women and literate workers were much aware about HIV/AIDS. Moreover, 10-14 age groups were much vulnerable than other [12]. According to Gani's research, urban adolescents had twice the knowledge of HIV/AIDS to rural adolescents. Moreover, the knowledge of STDs and HIV/AIDS transmission was lowest in 12 to 14 years old. Finally, uneducated female households' workers were the poorest socioeconomic status in rural settings [47]. In a survey of female adolescents only one in six adolescents had ever heard of AIDS [48]. In a study conducted in 2011 on 12,512 women ageing between 15 and 49, level of HIV knowledge among Bangladeshi women was quite low [49]. According to Gibney [35], for most Bangladeshis, condoms are known as a means of contraception but are not widely used. Hossain et al. found that correct knowledge of transmission and symptom of HIV among CSWs was poor. HIV/AIDS was viewed as a remote threat, overridden by immediate economic and survival concerns, although majority of SWs knew that condom protect the infection of HIV/STDs, only one third of sex acts on the last day of work were protected through condom use [50]. In a survey of 524 male married respondents, 26% had no knowledge about HIV/AIDS. Only 29% mentioned that condom might be a preventive measure against AIDS [51]. Moreover, condom use was low among the female regular sex partners of male drug users [52]. Finally, a study focused on men who have sex with men's sexual relations with women [53]. In conclusion, according to the Mahmood's review, importance should be given on safe sex, counseling and advocacy for the prevention of HIV/AIDS [54].

GENDER-RELATED RISK FACTORS FOR HIV INFECTION IN BANGLADESH

Some important gender differences in the risk of HIV infection have been outlined below.

Biological susceptibility

Women are biologically more vulnerable to infection of HIV/AIDS than men. During unprotected sex, woman may be prone to greater risk of HIV infection than man [55], because the female genital tract has a greater exposed surface area than the male genital tract, and women are exposed to infectious fluids for longer periods of time during sexual intercourse than men, and they also face increased risk of tissue injury during sex intercourse. Moreover, HIV targets CD4 cells. A

large number of CD4 cells are found in the cervix because it acts as a barrier to protect a potential fetus. For this reason, it is easier for the HIV virus to find the cells it will infect inside a woman, compared to a man. Additionally, women are also more likely than men to harbor untreated STDs or to have bacterial vaginosis, both of which enhance the probability of HIV acquisition. Finally, semen generally has higher viral load than vaginal fluids [56, 57].

Multiple partnership

Heterosexual intercourse is the primary mode of HIV infection worldwide [58]. Multiple partnerships seem to be widely prevalent among adolescents and young adults of both sexes throughout the world, with the exception of conservative (usually religious) groups. Moreover, in many cultures there is tolerance for multiple sexual partnerships, including extra-marital sex by men. Consistent use of condoms during a sexual intercourse provides protection from HIV [58]. However, much of the resistance to condom use encountered by condom promotion program is gender-related [59]. Specifically, men often force their partner to engage in sexual intercourse without using condoms and the most common reason given by there is that condoms reduce pleasure. Moreover, condom can be considered the outcome of a negotiation between potentially unequal partners. Indeed, gender-based power inequalities incorporate the belief that men should control women's sexuality and childbearing capacity [60]. A number of studies report that woman is often disinclined to use condom for fear of being seen as promiscuous or victim of violence/harassed by her partner during sexual act [59]. Therefore, in a relationship of unequal power, it's difficult for a woman to be able to negotiate effectively the use of condoms [60].

Sexual violence

Sexual violence occurs throughout the world. At the heart of sexual violence directed against women is gender inequality. In many countries, data on most aspects of sexual violence are lacking. However, available data show that in some countries nearly one in four women may experience sexual violence by an intimate partner, and up to one-third of adolescent girls report their first sexual experience as being forced [61]. Additionally, there is strong evidence regarding the relationship between Intimate Partner Violence (IPV) and HIV. In areas with a high HIV prevalence, women who are exposed to IPV are 50% more likely to acquire HIV compared to those who are not [62]. Across the world, adolescent girls and young women face the highest levels of IPV. According to the UN Children's Fund (UNICEF), 120 million girls globally are raped or sexually abused by the age of 20 [63]. Violence against wives is common among Bangladeshi men. Men who perpetrate such abuse represent increased risk regarding their wives' sexual health because they are more likely to both participate in extramarital sexual behavior and contract an STD compared with non-abusive husbands [64]. Violent or forced sex can increase the risk of transmitting HIV, because in forced vaginal penetration, abrasions and cuts commonly occur, thus facilitating the entry of the virus through the vaginal mucosa. Furthermore, adolescent girls are particularly susceptible to HIV infection, because their vaginal mucous membrane has not yet provided an effective barrier. In a similar way, those who suffer anal rape are also very susceptible to HIV since anal tissues can be easily damaged, again allowing the virus an easier entry into the body. People who experience forced sex in intimate relationships often find it difficult to negotiate condom use, either because using a condom could be interpreted as mistrust of their partner or as an admission of promiscuity, or else because they fear experiencing violence from their partner. Finally, forced sex in childhood or adolescence increases the likelihood of engaging in unprotected sex, having multiple partners, participating in sex work, and substance abuse [62, 63].

Commercial sex

Commercial sex can be considered as one of the most important risk for HIV/AIDS spreading. UNAIDS defined sex workers as

'Female, male and transgender adults and young people who receive money or goods in exchange for sexual services, either regularly or occasionally' [65]. Sex workers often share common risk factors; they have no access to condoms, or are not aware of their importance; then, especially in cases of young sex workers, they are simply powerless to negotiate safer sex. In some countries sex workers also inject drugs. Moreover, sex workers are often stigmatized, marginalized and criminalized by the society in which they live. The lack of protection leads to abuse, violence and rape, creating an environment which can facilitate HIV transmission [66]. Also in Bangladesh, there are cases of sex workers, especially young female, being physically and sexually abused by clients and the police [50]. Bangladesh has several well-documented at-risk groups, the most prominent of which is brothel-based sex workers [67]. Indeed, in Bangladesh prostitution is legal, but there are various provisions of different laws prohibiting child prostitution and forced prostitution. The UNICEF estimated in 2004 that there were 10,000 underage girls used in commercial sex exploitation in our country, but other estimates placed the figure as high as 29,000. It is recognized that low status of women, economic discrimination, lack of economic opportunities play critical role in Bangladesh, like in all developing countries of South-East Asia, South-Asia, and Africa [50].

Gender norms

In Bangladesh, religion and cultural tradition act at the same time on institutions of male dominance to determinate specific forms of masculinities and gender regimes, which produce men's gender-based violence against women in different ways. The sense of masculine responsibilities creates sexual double standards and undermines sexual rights and equality of women in relationships [6]. Norms of masculinity (including homophobia) can encourage high risk sexual behavior by men and make their partners more vulnerable [68]. Norms of femininity may discourage women from asserting control over the timing and circumstances of sex, including negotiating protection against HIV and other sexually transmitted infections. For women these patriarchal systems have negative consequences, such as restriction on mobility, fewer educational and employment opportunities, and low representation or participation in power structures [58, 60]. Lack of education, social norms and positioning, and economic insecurity limits decision-making power, mobility and access to information and services [68].

Early marriage

In Bangladesh, like in many parts of the world, it is common for young girls to marry before they are 18 years old. Most often, they marry older, sexually experienced men who may already be infected with HIV and transmit it to their young wives. Therefore, girls married before the age of 18 face significant risks of HIV. Crossing the threshold into marriage greatly intensifies sexual exposure via unprotected sex, which is often with an older partner who, by virtue of his age, has an elevated risk of being HIV-positive. For this reason, several studies on countries of Sub-Saharan Africa indicated that adolescent girls bear the greatest burden of HIV infections [59].

Malnutrition

Malnutrition can accelerate the progress of HIV infection to AIDS and HIV/AIDS leads to malnutrition, because of biological and social factors that affect the individual's ability to consume, use, and acquire food [69]. Rates of malnutrition in Bangladesh remain among the highest in the world, with an estimated six million children chronically undernourished [70]. Women are often victims of unequal distribution of foods, especially if their family is poor and illiterate [69]. Malnutrition undermines women's productivity, makes them more susceptible to infections, and leaves them with fewer reserves to recover from illness.

Stigma and Health seeking behavior

HIV-related stigma and discrimination refers to prejudice, negative attitudes and abuse directed at people living with HIV and AIDS. In 35% of countries with available data, over

50% of men and women report having discriminatory attitudes towards people living with HIV [71]. Men and women living with HIV/AIDS experience discrimination and stigma differently. Indeed, norms of masculinity can discourage men's use of HIV testing and other health services. Norms of femininity can prevent women (especially young women) from accessing HIV information and services [72]. This gender difference of stigma affects women more severely than men [44]. An UNAIDS study conducted across seven countries (Cambodia, Cameroon, Chile, Costa Rica, Papua New Guinea, The Philippines, and Zimbabwe) found that men with HIV were hardly questioned about how they became infected. On the contrary, women were often accused of having had extra marital sex (whether or not it was true) and received lower level of support [59]. Moreover, self-stigma is a barrier to seek help and access services when needed [68]. Stigma and discrimination against women living with HIV are severe. Married women, who have contracted HIV from having unprotected sex with their husbands, are often scorned, mistreated and even evicted from their in-laws home when their HIV status becomes known [68, 73]. Health seeking behavior is influenced by gender and, stigma and discrimination [68]. Socio-cultural norms that define male and female roles and responsibilities also affect women's and men's access to and use of health services, including HIV/AIDS services [59]. Therefore, HIV-related stigma can be a major barrier to the access of women living with HIV to services not only for HIV, but other areas of health. In particular, HIV-related stigma can influence a woman's decisions about her reproductive choices and prevention of mother-to-child transmission.

Economic disempowerment

There is a multitude of socio-economic factors that increase vulnerability of women to HIV. The subordinate positions of women in the society make them vulnerable in terms of economic dependency, lack of assets and lack of protection against abuse and exploitation. Women are also subjected to discrimination right from their childhoods in terms of denied access to education and gainful employment. In urban setting, cohabitation and temporary sexual relationships are gradually increasing because women need bear the cost of their family i.e. house rent, food, education etc. Pressure to provide income for themselves or their families leads some women to engage in 'transactional sex' with men who give them money or gifts in exchange for sex and, very often, women who are not economically independent cannot insist on condom use.

Migration

In Bangladesh, a large part of the gross domestic product comes from remittances. However, migration can place people in situations of heightened vulnerability to HIV and has been identified in certain regions like Bangladesh as an independent risk factor for HIV. Indeed, infected returning workers can contribute to spread HIV infection among women by sexual intercourse [32]. There is no official data on overseas migrants living with HIV and further research should be conducted regarding informal international migrant workers [8]. According a recent UNAIDS' report (2014), workers in the transportation sector, particularly long-distance truck drivers, have been identified as associated with an increased risk of acquiring HIV [74]. In Bangladesh, migrant workers account for a significant number of people living with HIV because they have to face conditions in their host country that make them vulnerable to acquiring HIV. For example, female migrants in transit may be forced to engage in transactional and unprotected sex to facilitate their border crossing. Moreover, sexual harassment, abuse and rape are experiences commonly reported by female migrants [57].

Table 2. Women-related risk factors for HIV.

	Risk factors	How the risk factors work
1	Biological susceptibility	The surface area of the female genital tract, and the exposition to infectious fluids for longer periods during sex intercourse make women more vulnerable to HIV infection. HIV targets CD4 cells which are found in the cervix, and untreated STDs, and bacterial vaginosis can enhance the probability of HIV acquisition. Adolescent girls are very susceptible to HIV infection, because their vaginal mucous membrane has not yet well developed.
2	Multiple partnership	Multiple partnerships are prevalent among adolescents and young adults. Moreover, in many cultures there is tolerance for multiple sexual partnerships, including extra-marital sex by men. Much of the resistance to condom use is gender-related.
3	Sexual violence and 'Intimate sexual violence'	Violent or forced sex can increase the risk of HIV infection, because in forced vaginal penetration, abrasions and cuts commonly occur, faciliting the entry of the virus through the vaginal mucosa. Moreover, men force their partner to engage in sexual intercourse without using condoms.
4	Commercial sex	Sex workers are often stigmatized, marginalized and criminalized by the society. This leads to abuse, violence and rape by clients and police. Sex workers are powerless to negotiate safer sex by using condoms.
5	Gender norms	Lack of education, low positioning in power structures, social norms, and gainful employment limits decision-making power, mobility and access to information and services.
6	Early marriage	Young girls are very often married with older men who may already be infected with HIV.
7	Malnutrition	Women are victim of unequal distribution of foods. Malnutrition can accelerate the progress of HIV and make women more susceptible to infections.
8	Stigma and health seeking behavior	Stigma affects women more severely than men. Stigma, self-stigma and discrimination are barriers to seek help and access services when needed.
9	Economic disempowerment	The subordinate positions of women in the society make them vulnerable in terms of economic dependency.
10	Migration	Migrant workers have to face conditions in their host country that make them vulnerable to acquiring HIV. Especially female migrants in transit may be forced to engage in transactional and unprotected sex to facilitate their border crossing. Moreover, sexual harassment, abuse and rape are common experiences.

POLICY IMPLICATIONS FOR THE PREVENTION

Recently, the Ministry of Health & Family Welfare of Bangladesh has developed the 3rd National Strategic Plan (2011–2015) based on the synthesis of evidence and a thorough assessment with wide range of consultations with government departments, civil society, public and private sector partners, Non-Governmental Organizations (NGOs), and community based organizations. Based on this Plan, the Government is continuing to provide care, support and treatment to all most at risk groups of the population (IDUs, female and male sex workers and clients, ma-

les who have sex with males and Hijra) along with focused prevention services for the vulnerable populations. However, in Bangladesh and in many developing countries, HIV disproportionately affects women and adolescent girls because of their unequal cultural, social, and economic status in society [8]. Gender inequality, intimate partner violence, and harmful traditional practices reinforce unequal power dynamics between men and women. This limits women's choices, opportunities and access to information, health and social services, education and employment [75]. Moreover, gender inequality affects HIV prevention, detection, and management. It's urgent to include programmes in order to address gender inequality and gender-based violence as both causes and consequences of HIV infection. These programmes should address women's and girls' inequality in sexual and reproductive decision-making; gender barriers to health services; discrimination in inheritance, property-holding, marriage, divorce and custody; sexual and other violence; lack of equal access to educational and economic opportunity; and lack of support to care-givers in HIV-affected households. Finally, such programmes should be complemented by programmes targeting men and boys which address harmful gender norms that make women and girls, as well as men and boys, vulnerable to HIV infection. As the third National Strategic Plan has highlighted, condom accessibility needs to be improved to prevent transmission of the HIV and other sexually transmitted diseases. According to finding of this review, promoting a later marriage, to at least age 18, and shoring up the protection options including condoms should be an additional preventive measure for HIV infection. However, promotion of both condom use and gender equality faces different socio-cultural barriers and needs context sensitive interventions.

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