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Original Article

Knowledge of AIDS and condom as a preventive measure against AIDS among married males and factors influencing it in Bangladesh

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Abstract

Background: The acquired immunodeficiency syndrome (AIDS) is now a global scourge of mankind. Nevertheless, Bangladesh is categorized as a low HIV prevalence country, from an epidemiological point of view, the HIV epidemic in Bangladesh is evolving rapidly. The majority of the studies on HIV/AIDS and condom use were carried out among the risk segment of people in the country. This study aimed to investigate the knowledge of AIDS and use of condoms among general population for prevention of HIV/AIDS in Bangladesh.

Methods: Both quantitative and qualitative study designs were adopted in this study. Cross-sectional data were collected from rural and urban areas. Married males aged 20 years and above constituted the study population. Data on 524 male respondents were analyzed using SPSS software (version 11.5). For qualitative data, selective in-depth interview was done using unstructured guidelines.

Results: Analysis indicated that 26% of the respondents had no knowledge about AIDS. More than one-fifth (23%) had poor, 26% had well and 25% had excellent knowledge on AIDS. Only 29% reportedly mentioned that condom might be a preventive measure against AIDS. Multivariate logistic regression analysis revealed that urban residents with access to electronic and printed media, better socioeconomic condition and service holders appeared to be significantly associated with knowledge of condom as a preventive measure for AIDS ($p<0.05$). However, in the social context, the respondents had different views about use of condom as a preventive measure against AIDS.

Conclusion: Useful and fruitful media campaigns to educate the people regarding the health consequences of STDs including HIV/AIDS and integrated approach is strongly suggested for disseminating knowledge and awareness to control the spread of HIV/AIDS among people in Bangladesh.

Key words: Knowledge, awareness, STDs, HIV/AIDS, Condom, Bangladesh

The acquired immunodeficiency syndrome (AIDS) is now a global scourge of mankind. It has been reported in almost all areas of the world. In the 25 years since it was first reported, AIDS has become the leading cause of premature death in sub-Saharan Africa and the fourth largest killer disease worldwide. More than 20 million people have died around the world since the epidemic began. By the end of 2004, an estimated 39 million people were living with HIV/AIDS. Nevertheless, at present Bangladesh is categorized as a low HIV prevalence country. From an epidemiological point of view, the HIV epidemic in Bangladesh is evolving rapidly. Bangladesh has a relatively low prevalence of less than 2% among vulnerable groups except in Injecting Drug Users (IDUs) where HIV positivity has rapidly increased from 1.7 percent in 2000/2001 to 4.9 percent in 2004-05. According to the National AIDS/STD Programme (NASP) the estimated number of people living with HIV was around 7500 as of end of 2004. As of December 2004, a total cumulative of 465 cases of HIV/AIDS have been confirmed and reported by the Ministry of Health and Family Welfare (MOHFW) with 87 of these having developed AIDS, out of which 44 have already died. In the context of a conservative society like Bangladesh, the issues surrounding sexuality and STDs are stifled, stigmatized and hence hidden. Another important factor might be that significant underreporting of cases occurs because of the country's limited voluntary testing, counselling capacity, and inadequate reporting system. The social stigma attached to the disease is a further impediment.[1,2]

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Nevertheless, while the spread of the HIV responsible for AIDS has come under great control in the advanced or Western nations, the developing countries, especially in Africa, are still battling with the acceptance of the gross reality of the pandemic. No wonder the AIDS threat is gradually becoming a great challenge for the developing nations. All over the world, health workers and researchers have agreed that prevention is a major avenue towards curbing the pandemic. In fact, until a reliable cure is found, prevention remains the most effective weapon against AIDS.[3]

Different researchers and social scientists argued that prevention is achieved mainly through education and enlightenment of the people on the adverse consequences of AIDS. In Bangladesh, the task of enlightenment has been embraced by government agencies and non-governmental organizations. This enlightenment exercise may have created an awareness of the existence of the disease but its real nature and life-threatening consequences may remain conjectural for a majority of the population. Hence, while media and other forms of enlightenment has been significant, the extent to which the people actually feels that AIDS is a real threat remains unknown. McPherson[4] opined that simplistic messages and information about AIDS alone is inadequate in the struggle against the pandemic. Therefore, there is need to ascertain the perception of AIDS by adults. Education and enlightenment on prevention of AIDS aims at changing the attitudes of the recipients of such education to the threat of the virus. As a result, it targets a change in both perception and behaviour.

In June 2000, the United States National Institutes of Health (NIH) convened an expert panel to evaluate peer-reviewed published studies on the effectiveness of latex condoms used by men in preventing sexually transmitted infections (STIs) during vaginal intercourse. The review concluded that condoms were effective in protecting against transmission of HIV to men and women and in reducing the risk of men being infected with gonorrhoea. The studies also show that condom use is associated with statistically significant protection against men and women against several other types of STDs, including Chlamydia infection, gonorrhoea, herpes simplex virus type 2 and syphilis.[5]

In contrast to the discouraging global trend, countries like Thailand, Uganda, and some of their neighbours have achieved notable success in AIDS prevention.[6] In Thailand, HIV began with a burst of transmission among injecting drug users, but 90% of transmission soon became heterosexual.[7,8] Public health officials realized that Thailand's large sex industry was playing a central role and responded with a "100% Condom Program" that mandates brothel owners to enforce condom use in every paid sex act.

Similarly, Cambodia has the highest HIV rate in the Asia-Pacific region, with a high proportion of transmission through commercial sex. However, Cambodia has a 100% Condom Program of its own, and condom distribution rose from 99,000 in 1994 to 16 million in 2001. Sexually Transmitted Infection (STI) rates among sex workers fell substantially, and HIV prevalence in the general population is down.[9-12]

In Bangladesh, the study on perceived knowledge on AIDS, preventive measures are lacking. From the foregoing sections, this study aimed at revealing the prevalent perceptions of AIDS by general population in Bangladesh. In addition, from this standpoint, the study aimed to assess the current perception of condom as a preventive measure against transmission of AIDS and factors influencing thereof.

Materials and methods

Both quantitative and qualitative study designs were adopted in this study. Cross-sectional data were collected from rural and urban areas of Bangladesh. Married males aged 20 years and above constituted the study population. A total of 524 male were included in the sample with a ratio of 3:2 in urban and rural areas. For collection of quantitative data, face-to-face interview was carried out using a pre-designed interview schedule consisting of questions related to knowledge, perception, mode of transmission and prevention of AIDS and knowledge on condom as a preventive measure against AIDS. For qualitative data, selective in-depth interviews were carried out using unstructured guidelines. The study respondents were adequately informed and explained about the purposes and objectives of the study. They were assured of the privacy and confidentiality of the information. So, informed consent was obtained before a respondent was interviewed. Their voluntary cooperation was sought to the respondents and no information was collected by coercion or threat to them. The study as such followed the basic research ethics by ensuring the participants about the anonymity and utility of the information and guaranteeing them that the information would be used purely for research purposes. Both uni-variate and bi-variate analyses were performed. Multivariate logistic regression analysis was used to identify the socio-economic and demographic factors, which are significantly related to knowledge on condom as a preventive measure against AIDS. Principal Component Analysis (PCA) was applied to assess the wealth

index. Variables included in the PCA model were possession of household assets including bed cot, radio, television, gold ornaments, rickshaw van and type of latrine use. Possession of motor cycle and motorcar were excluded from the model as of very low frequency. Then the wealth index was ranked into three categories such as poor, middle class and rich. Similar analysis was done to assess the composite correct knowledge of AIDS based on mode of transmission and prevention of AIDS. Data analysis was performed using the Statistical Package for Social Science (SPSS version 11.5). Statistical significance was tested at 5 percent of probability level and p value <0.05 was considered as significant.

Results

Socio-demographic characteristics: The mean age of the respondents was 33.4±7.4 years with a range of 20 to 55 years. Among the respondents, 40% of them live in rural and 60% in urban areas. More than one-third (36%) were labourer followed by 28% engaged in small trade, 19% businessmen and 17% serviceholders. The median income of the respondents was Taka 4500.0, one-tenth (10%) had income more than Taka 12000.0. Regarding the level of education, 16% were illiterate and 25% had primary level of education. However, one-fifth (19%) of them had graduation and above level of education. The mean family size was 4.7 persons. One third of the respondents (34%) belonged to poor class, 28% middle class and 37.8% higher class (*Table 1*).

Knowledge on Sexually Transmitted Diseases (STDs): Out of 524 respondnets, 76% did know about AIDS followed by syphilis (54%), gonorrhoea (47%). However, one fifth (20%) did not know about any sexually transmitted diseases (*Figure 1*).

Knowledge on mode of transmission of AIDS: The respondents who ever heard about AIDS were asked about the mode of transmission of AIDS. Only 27% of the respondents did not know about the mode of transmission of AIDS. More than four-fifths (83%) of the respondents mentioned that AIDS may be transmitted through sexual intercourse by sexual partners who habitually have multiple sexual partners followed by transmitted through unscreened blood transfusion (64%), sharing needle for drug use (60%), sexual intercourse without condom (39%), homosexuality (32%) (*Table not shown*).

Knowledge on prevention of AIDS: About one third (30%) did not know about the preventive measure against AIDS. Three fourth (75%) of them mentioned avoid promiscuous sex followed by use condom during sexual intercourse (68%), use sterilized syringe (47%), avoid sex with commercial sex workers (46%), not to have sexual intercourse with multiple sexual partners (33%), avoid homosexual contact(25%)(*Table not shown*).

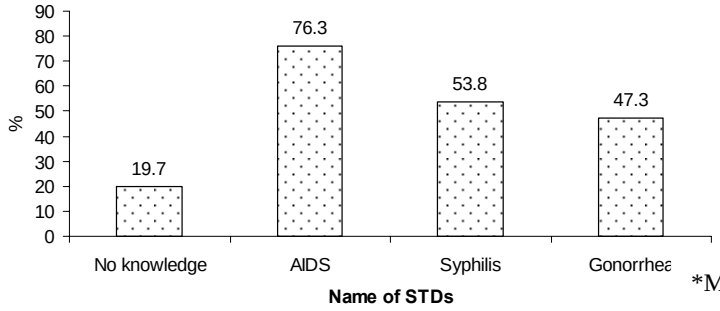
Overall knowledge on AIDS: To assess the overall knowledge of AIDS, factorial analysis with principal component analysis model was adopted including the number of correct knowledge on mode of transmission and knowledge on prevention of AIDS. Analysis indicated that 26% had no knowledge about AIDS. More than one-fifth (23%) had poor, 26% had good and 25% had excellent knowledge on AIDS (*Figure 2*).

Knowledge of contraceptive and condom as a preventive measure against AIDS: It was found that contraceptive knowledge is almost universal among the married male in Bangladesh. Almost all the respondents are aware of at least one method of contraceptives. However, it is obvious that knowledge on various methods of contraceptives does not imply that respondents actually know how to use these methods effectively and decisively. The most common known method was oral pill (88%). Condom is the next known method (82%) followed by injectables (33%), tubectomy (22%), IUDs (12%). It was found that in response to the question as to when one should use condom, 90% of the respondents mentioned condom should be used for contraceptive purposes and only 29% of the respondents mentioned that condom may be a device for prevention of AIDS. This information has serious implication as the knowledge of condom other than contraceptive were still needs to be improved and the propagation and campaign for its use promotion will be necessary (Table not shown).

Differentials of knowledge of condom as preventive measure against AIDS: Multivariate analysis: Multivariate logistic regression analysis was carried out to assess the independent effects of the variables of knowledge of condom as a means for prevention of AIDS. Accordingly, the perception of condom as a preventive measure dichotomized into 'yes' having correct knowledge and 'no' having no knowledge was fitted into binary logistic regression model. Five variables, out of nine fitted in bi-variate analysis showed significant association with knowledge of condom as a preventive measure for AIDS were entered into final logistic regression model. Analysis revealed that urban residents with access to electronic and printed media, better socioeconomic condition and serviceholders appeared to be significantly associated with knowledge of condom as a preventive measure against AIDS. Access to

electronic media and printed materials was an important predictor of having correct knowledge on condom as a preventive measure. Respondents with urban residents were 1.8 times more likely to have correct knowledge compared to their rural counterparts. Most interestingly, the respondents having access to electronic and printed media were 2.0 times more likely to have correct knowledge of condom as a preventive measure against AIDS. Similarly, middle and upper class had better knowledge than poor class (*Table 2*).

Figure 1. Knowledge on Sexually Transmitted Diseases* (n=524)



*Multiple respnonse

Table 1: Socio-demographic Characteristics of the Respondents (n=524)

Characteristics	***Frequency***	***Percent***	***Mean±SD***
Age in years			
20-29	179	34.2	33.4±7.4
30-39	234	44.7	
40-49	92	17.6	
50-59	19	3.6	
Residence			
Rural	208	39.7	
Urban	316	60.3	
Occupation			
Service	89	17.0	
Business	100	19.1	
Small trade	147	28.1	
Labourer	188	35.9	
Monthly family income(Tk)			
<3000	104	19.8	Median income (Tk.)
3000-5999	219	41.8	Tk. 4500.0
6000-8999	85	16.2	
9000-11999	61	11.6	
≥12000	55	10.5	
Level of education			
No schooling	86	16.4	
Primary	129	24.6	
Secondary	85	16.2	
S.S.C	63	12.0	
Higher secondary	60	11.5	
Graduate and above	101	19.3	
Family size			
2-3	122	23.3	4.7±1.7
4-5	250	47.7	
6-7	115	21.9	
≥8	37	7.1	
Wealth Index			
Poor (-3.24215- -.05471)	177	33.8	
Middle (-.02949- .43780)	149	28.4	
Rich (.47689-.94625)	198	37.8	
Access to Media			
Electronic media	327	62.4	
Electronic and printed media	177	33.8	
Printed media	20	3.8	

Figure 2. Overall Knowledge on AIDS (n=524)

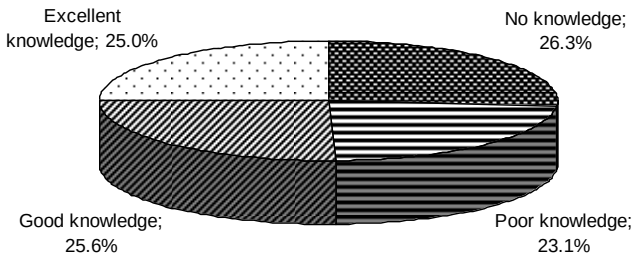


Table 2: Logistic Regression Analysis of Knowledge on Condom as a Preventive Measure against AIDS and Selected Variables

Variables	***β***	***S.E.***	***p value***	***Odds ratio***	***95.0% C.I.***
Residence					
Rural (Ref)	-	-	-	-	
Urban	0.596	0.261	0.022	1.815	1.089-3.025
Occupation					
Labourer (Ref)	-	-	-	-	
Service	0.795	0.375	0.034	2.214	1.063-4.613
Business	0.297	0.372	0.425	1.346	0.649-2.790
Small trade	0.400	0.348	0.250	1.492	0.755-2.951
Literacy					
Illiterate (Ref)	-	-	-	-	
Literate	0.059	0.450	0.895	1.061	0.439-2.563
Wealth index					
Poor (Ref)	-	-	-	-	
Middle	1.647	0.395	0.000	5.192	2.393-11.265
Rich	1.434	0.421	0.001	4.197	1.840-9.572
Media exposure					
Electronic & printed media	0.731	0.271	0.007	2.077	1.221-3.534
Others (Ref)	-	-	-	-	
Constant	-3.183	0.445	0.000	0.041	
Model chi square	107.424				
df	8				
p value	0.001				
N	524				

Discussion

The results of the present study have shown that the level of general knowledge about HIV/AIDS (74%) is good, but their knowledge about preventive measure is insufficient indicating low knowledge about preventive measure. They have also poor knowledge of condom as preventive device against AIDS transmission. So, the use of condom as a preventive measure against AIDS during sexual encounter is not effective and consistent. Such discrepancies between a relatively high knowledge on one hand, and poor practice on the other, in relation to condom use against HIV/AIDS infection has been demonstrated by various other studies.[13-15]

The findings of the study also suggest that the general population of Bangladesh are not sufficiently aware about STDs/AIDS and their modes of transmission and also its prevention. Although, it is apparent that higher proportion of adult males had knowledge about AIDS just naming of the disease. In fact, the knowledge about STDs/ AIDS is much low because there is a gap in

their perceived knowledge and belief that is large proportion of people bear misconception about STDs/AIDS. For example, STDs/AIDS cannot spread in the environment unless there is a sexual contact or an exchange of blood with an infected person. Sexually transmitted diseases and AIDS do not spread by doing routine activities like sitting next to someone, shaking hands or working with others. Informal discussion with respondents it was explored that some of them bear misconception about disease transmission through sharing of public transportation, cup or drinking glass, plate or utensil, food, water or air, toilet, touching, hugging, coughing and sneezing. These sorts of beliefs may develop negative attitude towards STD/AIDS patients. Negative attitude towards persons suffering from STDs/AIDS fear and cause them to isolate themselves from the society. On other hand, these misperceptions lead to bear negative attitude to hold the actual act to handle the disease situation. This kind of attitude and negative behaviour of the community may affect the success of STDs/AIDS control programme and it is also not a humanistic approach.

In the context of Bangladesh, HIV/AIDS is not just a health issue in our society. It is also a social, economical, developmental, ethical and psychological issue. Social, ethical and religious educations, including political leadership and family have the enormous impact on the nation's morality. It is a matter of great concern regarding HIV issues that our neighbouring countries- India, Myanmar and Nepal are considered to be the focal point of HIV epidemic in this region. An expert assumption is that the number of people infected with HIV in India will rise to 15-20 million by 2010. The Bangladesh has a porous boarder and there is a potential risk of transmission of disease through different tradesmen, labourers, truck drivers who lead risky sexual behaviours and mix up with general population.

Education and Religion should have positive effects on morals, but it is failing to fulfil that responsibility due to economical conditions of the country. Although HIV/AIDS is still largely concentrated in at high-risk groups, including migrant workers, commercial sex workers, injecting drug users, and moveable population mainly truck/bus drivers. The surveillance data indicates that the epidemic is affecting outside these groups in some regions and into the general population. Also, HIV/AIDS no longer affects only the high-risk groups or urban populations, but it gradually spreads into rural areas and in the general population. So, these risks will influence from urban to rural. In some groups, particularly among the Drug Users through Needle sharing (IDUs) are reporting the higher prevalence, but there is absolutely no doubt that the virus will penetrates into the general population.

Current prevention/risk reduction strategies include abstinence, mutual monogamy with an uninfected partner, use of condoms and engaging in sexual activity that does not result in the transfer of bodily fluids or cell-to-cell transmission. There are no marketed microbicides or vaccines (with the exception of hepatitis B vaccine) for the prevention of STDs, although research to develop them is underway. All STD prevention and risk reduction strategies involve the complex interplay of biological, behavioural, social and structural factors. In the approach to AIDS, we grant special attention to the concept of culture that defines it as the "way of living together" and how it influences people's style of living. Within this process "to increase people's options" giving an importance not only to collective capacities, but also to the capacities of individuals to develop into healthy, educated, productive and creative persons has been a much-debated approach where education and communication constitute an important element.

It is inherent that a cross sectional study bears some limitations; this study is not an exception. This study has highlighted the association between perception of condom as a preventive measure against AIDS, sociodemographic and knowledge variables of AIDS. However, it has not demonstrated a causal link between risk perception and sexual behaviour, primarily because of the cross-sectional nature of the data. Reverse causality is possible between these variables. For example, high perception of risk could lead to a change either to safer sexual behaviour, or to fatalism and no change in behaviour. Similarly, risky sexual practices may lead individuals to perceive their risk of HIV infection to be high. Endogeneity may also bias the results. For example, having accurate knowledge about AIDS transmission may lead to the consistent use of condoms during risky sexual encounters, which could in turn lead to lower perception of HIV risk. In this study, no risky sexual behaviour could be explored. However, the in-depth interview gave substantial information about the risk of acquiring HIV infection. Other limitation of methodological issues of selection of only male married over 20 years. Unmarried and the female counterparts are not included in the study. So, their perception on contraceptive and preventive measure against AIDS is unexplored. Finally, perception of HIV risk is not static but varies with the context and over time. Individuals may perceive different levels of risk at different stages in their lives and with different social and cultural settings.

Conclusion

Findings of this study have uncovered a concern about condoms and AIDS education campaign as well as current perception about HIV/AIDS. Men have internalized the notion that AIDS is a disease of promiscuous men and condoms are choices for promiscuous sexual actions. Therefore, men who receive AIDS educational messages attach a negative notion to condoms as preventive tools for promiscuous men. How then can an educational campaign address the issue of condoms in this AIDS era? The central strategy of condom promotion should avoid supporting the notion that only promiscuous men (or women) to prevent HIV/AIDS use condoms. Rather condoms can be advocated in the framework of sexual pleasure for every man and woman, an essential means for keeping trust and love and as tools for skilled sexual acts for men.

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