

RESEARCH PAPER

Determinants of HIV/AIDS Knowledge among Women: A Study in Khulna District of Bangladesh

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ABSTRACT

Women are utmost vulnerable group to HIV/AIDS on a global scale. Thus understanding the determinants of HIV/AIDS knowledge especially for women is highly essential for achieving the safety of the next generation and sustainable development goal (SDG) (e.g. SDG 3). Considering this aspect our study explored the determinants of HIV/AIDS knowledge for women considering their socio-demographic factors: age, education, occupation, living area, religion etc. A purposive sample of 248 women (above 18 years old) from ward no. 26 of Khulna City Corporation and Angardoha village, Dumuria upazila in Khulna District of Bangladesh was selected for this study. Semi-structured interview schedule was used to collect the required information. Our study revealed that 88.3 percent respondents heard about HIV/AIDS, and 56.9 percent had the specific knowledge (untreatable) of HIV/AIDS. More than half of the women (61.5 percent) knew that condom use reduces the risk of HIV/AIDS. The highest number of the respondents knew that having one sex partner reduces the risk of HIV/AIDS. Results indicated that participant's education, residence type, monthly family income and expenditure have influence on HIV/AIDS knowledge among women. The HIV/AIDS oriented knowledge of the respondents was associated with the respondents' religion, residence, marital status and education ($p < .05$). The level of HIV/AIDS oriented knowledge among women is relatively low and the household socio-demographic determinants are rooted as the delimiting factors.

Key words: Determinants, HIV/AIDS, Knowledge, Women, Bangladesh

Introduction

Human Immunodeficiency Virus (HIV) infection or Acquired Immune Deficiency Syndrome (AIDS) has been alarmingly becoming a major public concern in the world, and this is one of the major pandemics (global) and epidemics (regional) that has demolished huge numbers of populations in almost all over the world. Besides, The United Nations General Assembly special session on HIV/AIDS declared a strengthened policy capability to address HIV as a gender-related issue (UNGASS, 2003). Hence, the pandemic HIV virus has infected more than 70 million people from the beginning of its infection and approximately 35 million people died of this virus till last year (Rauer et al., 2008). Among the total adults, almost 50 per cent of female adults have lived with HIV/AIDS all over the world. HIV/AIDS is a virus created sickness which cannot be prevented by any kind of medicine or any other entity in the world, so far.

But the spreading of this virus, perhaps, can be reduced by spreading knowledge to the common people about its prevalent and devastating attitude (Huda & Amanullah, 2013). There is no country or area of the world where it cannot reach or affect. In 2012, among the death instigating disease HIV/AIDS gained the sixth position all over the world, the fifth position in middle-income countries and the third in small-income countries (Mondal et al., 2016). Another study found that Sub-Saharan Africa saw the acute effects, and the total world saw a severe AIDS epidemic (Öjteg, 2009; Glick et al., 2008). Studies show that most people, especially women, do not know about the prevention, treatment, cure or care of HIV/AIDS (Rahman, 2009). In Bangladesh, an HIV/AIDS patient was first found in 1989 (Rahman, 2009; Rahman, et al., 2014). The latest government statistics (2017) suggest that about 4721 HIV/AIDS

patients are detected in Bangladesh. But according to the UNAIDS, HIV positive patients in Bangladesh are above 17,600. In most of the cases, HIV/AIDS is found in Bangladesh among injected drug users. Moreover, the rate of occurrence of HIV/AIDS in Bangladesh is as high as 2% in 2012 and 8% by 2025 because of poor knowledge about HIV/AIDS, especially among women (Sharmin, 2014). Additionally, poor voluntary advice, poor extreme testing and accurate knowledge are mostly responsible for thinning out HIV/AIDS in Bangladesh. Because of poverty, gender inequality, vast population and transactional sex, the status of HIV/AIDS in Bangladesh is very alarming (Mondal et al., 2016). Furthermore, there are many modified determinants that affect the knowledge of HIV/AIDS among women. Knowledge about the determinants of HIV/AIDS can not only reduce the extent of the HIV/AIDS virus but also make people aware of the epidemic status of this virus. Therefore, people can be careful about this serious disease. Knowledge about the determinants of HIV/AIDS plays a vital role in preventing the transmission of HIV and also changes delusion about it (Tenkorang & Owusu, 2013). Accurate knowledge about the determinants of HIV/AIDS growth improves safer sexual behavior and interactive changes it (Tenkorang & Owusu, 2013). Women, in most cases, have no or limited right to safe sexual behavior (Asaduzzaman et al., 2014). The transmission of HIV/AIDS occurs through apprehensive sexual contracts (such as heterosexual or homosexual), blood transfer, and sperm or organ donation, filthy needles etc. It is also transported from affected women to their newborn children (Hasan et al., 2013; Mondal & Shitan, 2013). Simply, continuous esteemed studies conducted in different regions show that knowledge about the determinants of HIV is the absolute way to reduce the spread of HIV/AIDS (Alwafi, et al., 2018; Saada, et al., 2013). However, the last decade shows that mortality surge and reduced life expectancy are the common characteristics in the countries that are hit hard by the HIV virus (Mondal & Shitan, 2013). Consequently, perfect knowledge about the determinant of HIV/AIDS is essential to understand the scenario accurately. Some prominent research indicates that Bangladesh badly falls under the prodigious danger of HIV adulteration but the people who live in rural areas are still diminished aware of the epidemiology of HIV/AIDS (Mondal & Shitan, 2013). However, the country is in a very perilous condition and the existence of low knowledge level, low or no knowledge of condom use, unsafe professional blood transfer, human rights violation all are responsible for the fast spreading of HIV/AIDS in Bangladesh (Azim et al., 2008; Bassel, et al., 2014). The condition of HIV/AIDS in Bangladesh may become an epidemic as a result of meager knowledge about HIV/AIDS. However, enhancing public awareness and knowledge, especially

HIV/AIDS knowledge for women in Bangladesh among women, may be one of the necessary steps to reduce HIV/AIDS (Asaduzzaman et al., 2014). The vulnerable people can defend it by getting proper knowledge about HIV/AIDS.

Materials and Methods

This study is cross-sectional research work conducted on 248 women who were 18 or above 18 years old from Ward no. 26 of Khulna City and Angardoha village of Kharnia union parishad of Dumuria upazilla in Khulna District of Bangladesh. Survey research design was followed in this study and a total of 248 respondents from the head of the household and permanent inhabitants in the selected study areas. The respondents were selected by using a simple random sampling technique (lottery method without replacement) after a census was conducted in the selected areas. Twenty-four respondents could not either be reached or decided not to participate in this study. The response rate for this study was 92%. A thorough review of relevant literature was done in preparing the interview schedule used in this study. We included a total of 41 items in the interview schedule and pre-tested it on 20 respondents before the final data collection. Data has been collected during the month of February to March 2019 with face-to-face interviews. To maintain accuracy and objectivity, the principle of a simple random sampling method is followed, where the formula for calculating sample sizes is:

$$ss = \frac{Z^2 \times p \times (1-p)}{c^2}$$

Where:

ss = Sample size

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (0.5 used for sample size needed)

c = confidence interval, expressed as decimal

The sample size according to the population is 248

A simple random sampling technique was used for the collection of the primary data from 248 samples from the selected study areas. The following table shows the distribution of respondents by area. The data collected was organized and resolved through Statistical Packages for Social Sciences (SPSS) version 21 software. The principal ordinal dependent variable, determinants of HIV/AIDS knowledge, was categorized as high, medium and low. The bivariate analyses were accomplished using the chi-square test to examine possible associations between HIV/AIDS knowledge and selected covariates to know the marginal effects of independent variables. The socioeconomic variables used in the study were age (<27, 28-37, 38-47 and >48 years), religion (Muslim and non-Muslim), educational status (Illiterate, Primary, Secondary and higher Secondary), Residence (Rural and Urban), Occupation (Working and non-Working), Monthly Income (<10000, 10001-20000, 20001-30000 and >30001 BDT). Ethically authors have been acquired both written and verbal consent from the participants in this study and followed a strict standard of protecting their privacy. The participants were informed that participation in this study is voluntary and they had the freedom to terminate themselves from the interview process if they wished.

Table 1: Variable description

Serial	Variable	Variable	Unit of Measurement
1.	Age	Age of the Respondent	In Year
2.	Living Area	Location of the Respondents	Dummy (1=Urban, 0= Rural)
3.	Religious Status	Religion of the Respondents	Dummy (1=Muslim, 0=Non-Muslim)
4.	Education	Education of the Respondents	Years of the schooling
5.	Husband's Education	Education of Husband	Years of the schooling
6.	Marital status	Marital status of the respondents	Dummy (1=Married, 0=Others*)
7.	Occupational Status	Occupational status	Dummy (1=Working, 0=Not Working)
8.	Income	Income of the Respondent	Thousand Taka/Month
9.	Expenditure	Expenditure of the Respondent	Thousand Taka/Month

Source: Author's Compilation, 2019

Results

The group of age differences helps to identify the level of knowledge about HIV/AIDS among women. The majority (46.0%) of the respondents belong to the age group 18 to 27 years (Table 2). It reveals the religious status of the respondents. Besides, among the 248 respondents, 15.2 percent were non-Muslims and 84.7 percent were Muslims who had knowledge about HIV/AIDS. It corresponds to the marital status of the respondents. Among the 248 respondents, 77.0 percent were married and the rest, 23.0 percent were others, which included unmarried, widened, separate respondents. Moreover, it is observed that around 39.1 percent of women were found at primary education level

whereas 26.6 percent of women completed Higher Education. It illustrated the respondent's husband's educational status, in which about 32.3 percent were illiterate. Besides, it represents the Occupational status of the women who belong in both rural and urban area. As well, the maximum women respondents were not working and their percentage was 79.4. Only 20.6 percent of women were employed in various sectors. Furthermore, it represents the distribution of respondent's family income that majority 36.3 percent families belong to the medium income level BDT 10001 to 20000. In addition, the data shows the condition of the monthly family expenditure pattern of the respondents whereas 39.9 percent of respondents' monthly family expenditure was 3000 to 12000 Tk.

Table 2: Demographic and Socio-economic Information of the Respondents

		Number (f)	Percentage (%)
Age Structure (In years)	18-27	114	46.0
	28-37	66	26.6
	38-47	36	14.5
	48 Above	32	12.9
Religion	Non- Muslim	38	15.3
	Muslim	210	84.7
Marital status	Married	191	77.0
	Others*	57	23.0
Educational Status Respondent	Illiterate	31	12.5
	Primary (1-5)	54	21.8
	Secondary (6-10)	97	39.1
	Higher (11above)	66	26.6
Husband Educational Status	Illiterate	80	32.3
	Primary (1-5)	23	9.3
	Secondary (6-10)	70	28.2
	Higher (11above)	75	30.2
Residential area	Rural	112	45.2
	Urban	136	54.8
Monthly Family Income	1000-10000	64	25.8
	10001-20000	90	36.3
	20001-30000	41	16.5
	30001 Above	53	21.4
Monthly Family expenditure	3000-12000	99	39.9
	12001-21000	68	27.4
	21001-30000	38	15.3
	30001 above	43	17.3

Source: Author's Compilation, 2019

Table 3: Association between the HIV/AIDS knowledge and Socio-demographic determinants

Association between the HIV/AIDS knowledge and socio-demographic determinants					
HIV/AIDS Knowledge Score					
Variables	High (%)	Medium (%)	Low (%)	Statistics	p-value
Age					
18-27	51.8	36.8	11.4	28.250	.000
28-37	56.1	36.4	7.6		
38-47	36.1	41.7	22.2		
48 Above	31.2	28.1	40.6		
Religion					
Muslim	47.6	34.3	18.1	6.448	.040
Non-Muslim	50.0	47.4	2.6		
Residence					
Rural	29.5	48.2	22.3	28.250	.000
Urban	63.2	26.5	10.3		
Respondent Education					
Illiterate	6.5	32.3	61.3	118.525	.000
Primary Education	16.7	61.1	22.2		
Secondary Education	52.6	40.2	7.2		
Higher Education	86.4	12.1	1.5		
Husband's Education					
Illiterate	36.2	40.0	23.8	63.038	.000
Primary Education	13.0	56.5	30.4		
Secondary Education	34.3	48.6	17.1		
Higher Education	84.0	14.7	1.3		
Monthly Income					
1000-10000	29.7	39.1	31.2	73.181	.000
10001-20000	27.8	54.4	27.8		
20001-30000	68.3	24.4	7.3		
30001 Above	88.7	11.3	0.0		
Occupational Status					
Not working	44.2	38.6	17.3	5.729	.057
Working	62.7	27.5	9.8		
Marital status					
Married	49.2	35.6	15.2	.526	.769
Others*	43.9	38.6	17.5		
Monthly Expenditure					
3001-12000	31.3	42.4	26.3	60.518	.000
12001-21000	32.4	50.0	17.6		
21001-30000	73.7	23.7	2.6		
30001 above	88.4	11.6	0.0		

Source: Author's Compilation, 2019

Others*: Unmarried, Widow, Separated

The cross-tabulation result which presented the comparison between participants in groups based on their HIV/AIDS knowledge score in relation to socio-demographic determinants; Age, residency, education, religion, monthly income and occupation (Table 3). Results indicated that the household factors, which are divided into high, medium and low levels of knowledge. The low level of knowledge score (40.6%) existed among the age group of 48 years or above the age of 48 years, where the high level of knowledge score (56.1%) existed among the age group of 28 to 37. The findings ($P < 0.000$) expressed the strong relationship between the respondents' age and HIV/AIDS knowledge. The table

also showed the relationship between the religion of the respondents and their knowledge of HIV/AIDS. The low knowledge score was 18.1 percent among Muslim participants, whereas 50.0 percent of participants had scores who were non-Muslim. The moderate knowledge score (47.4%) was more among the non-Muslim respondents than that of the Muslim respondents. Here Pearson Chi-square is 7.953. The findings ($P < 0.040$) exposed that there is a statistically significant relationship between the religion of the respondents and the knowledge of HIV/AIDS. The living area is an important variable which creates a relationship with knowledge. The high knowledge score was 63.2 percent

among the urban areas' respondents. But the moderate and low scores of knowledge's were from rural respondents, which were respectively 48.2 and 22.3 percent. Here Pearson Chi-square is 28.250. The findings ($P < 0.000$) exposed that there is also a statistically significant relationship between residential areas of the respondents and the knowledge of HIV/AIDS like the previous one. The data table also showed the relationship between respondents' education and HIV/AIDS knowledge. The highest score (86.4%) of knowledge was among the respondents who were highly educated. The low score (61.3%) of knowledge was among the respondents who were illiterate. The moderate knowledge score was higher among the primary educated respondents than that of other education. Here Pearson Chi-square is 118.525. The findings ($P < 0.000$) exposed that there is a spectacularly significant relationship between education of the respondents and the knowledge of HIV/AIDS. The relationship between the respondents' husbands' education and HIV/AIDS knowledge. The higher score (84.0%) of knowledge was among the respondents' husbands, who were highly educated. The low score (23.8%) of knowledge was among the respondents' husbands, who were illiterate. The moderate knowledge score was higher among the respondents' husbands who completed primary education than that of other education. Here, Pearson Chi-square is 63.038. The findings ($P < 0.000$) showed that there is a statistically significant relationship between the education of the respondents and the knowledge of HIV/AIDS. The

HIV/AIDS knowledge for women in Bangladesh association between the family income of the respondents and the level of knowledge is shown in Table 4. The high score of knowledge about HIV/AIDS was 88.7 percent for the income level of 30001 and above 30001 Tk. However, the low score of knowledge existed between the income levels of 1000 to 10000 taka, but the moderate score of knowledge remained between the income levels of 10001 to 20000 taka. Here Pearson Chi-square is 73.181. The findings ($P < 0.000$) show that there is a statistically significant relationship between the family income of the respondents and the HIV/AIDS knowledge. But the findings ($P \text{ value} < 0.057$) show that occupational status is not significantly associated with the HIV/AIDS knowledge score of the respondents and $P < 0.769$ shows that there is no relationship between respondents' marital status and the HIV/AIDS knowledge score. The data table shows the association between the family expenditure of the respondents and the level of knowledge. The high score of knowledge about HIV/AIDS was 88.4 percent between the expenditure level of 30001 and above 30001 Tk. And the low score of knowledge (26.3%) exist among the income level 3001-12000 taka. Here Pearson Chi-square is 60.518. The findings ($P < 0.000$) show that there is a statistically significant relationship between the family expenditure of the respondents and the HIV/AIDS knowledge. So, the different determinants were analyzed on the proportion of knowledge level of the respondents. Here different determinants were verifying the level of HIV/AIDS knowledge among women.

Table 4: OLS Models of Predictors of f dependent and independent variables

OLS Models between dependent and independent variables		
Independent variables	HIV/AIDS knowledge	
	Correlation (r)	P-value
Age	-0.222**	0.000
Respondent Education	0.621**	0.000
Respondent's Husbands education	0.365**	0.000
Monthly Income	0.477**	0.000
Monthly expenditure	0.447**	0.000
Place of residence	0.312**	0.000
Religion of the respondent	-0.088	0.167
Occupation of the respondent	0.144*	0.023
Marital status of the respondent	-0.044	0.486

Source: Author's Compilation, 2019

Table 4 represents that the impact of socio-economic factors influences the HIV/AIDS knowledge level and its covariates by applying Pearson's correlation coefficient. The coefficient value of Respondent Education is 0.621, which is significant at 1 percent level. Another important variable is the respondent's husband's education. The coefficient value for respondent's husband's education is 0.365. It implies that HIV/AIDS knowledge is positively related to respondent's husband's education. An additional important variable is monthly income. The constant value for monthly income is 0.477. It indicates that HIV/AIDS knowledge is absolutely related to monthly income. Another important variable is monthly expenditure. The factor value for monthly expenditure is 0.477. It specifies that HIV/AIDS knowledge is absolutely related to monthly expenditure. Another important variable is the age of the respondent. The

coefficient value of age of the respondent is -0.222. It implies that HIV/AIDS knowledge is negatively related to the age of the respondent. Other insignificant variables like religion and marital status are negatively related to HIV/AIDS knowledge. Therefore it has been concluded that the correlation coefficient of HIV/AIDS knowledge and Respondents' education, Respondent's" Husbands education, incomes, monthly expenditure and residence are also a strongly positive relation, while relation between the HIV/AIDS knowledge and Age of the respondent is small and negative relation. OLS regression tells us that religion, occupation and marital status are negative relations.

Discussion

A numerous range of findings were found in this study by analyzing the statistical data. Now the findings and

summarization of the determinants of HIV/AIDS knowledge among women in urban and rural areas at a petite appearance is given below: The intention of the study was to evaluate the determinants of HIV/AIDS knowledge among women. Here, the study described the level of HIV/AIDS knowledge, preventive knowledge and the perception of HIV positive patients among women who were 18 or more than 18 years old. This also included the socio-demographic issues of the respondents like age, living area, educational information, occupational status and monthly income and expenditure. Though the study investigated the knowledge level of the specific residential areas (rural and urban), women reported that mostly 88.3 percent of most women had heard about HIV/AIDS. The findings are not similar to the previous studies of higher secondary school students in Bangladesh (Hoque, 2015; Rahman et al., 2014) who explored in their study that most of the respondents heard about it. Here the study states that half of the women (56.1%) have a high score of knowledge, who exists in the age group of 28 to 37 years. That expresses the high age of the respondents, decreasing the level of knowledge. Here ($p < .000$) exposed the strong relationship between women's age and knowledge level. It was also expressed that the respondent's age ($r = 0.222$) was negatively related to HIV/AIDS knowledge. Asaduzzaman et al. (2014) explored that almost two-thirds of women (63.0%) aged 15 to 49 years increased about HIV/AIDS. The educated and wealthier women have more knowledge about HIV/AIDS and the increasing level of education also increased the level of knowledge (Glick et al., 2008; Rahman et al., 2014; Sharmin et al., 2014). This study also identified that higher-educated women and high-income family women have high scores of knowledge about HIV/AIDS. Here ($p < 0.000$) and ($r = 0.621$) states the positive relationship between women's education and the knowledge of HIV/AIDS. Furthermore, women who had the access of education grew more knowledge than the illiterate and lower educated women because they have no extra income to spend money in purpose of education. Along with this, women's husbands' education ($p < 0.000$) is significantly associated with the knowledge of HIV/AIDS. In the same vein as that of UNICEF, women's education has wider ramifications and, as per the present study, education increases the chances of having higher HIV/AIDS knowledge. Rahman (2009) stated that there was a variation in the level of knowledge about HIV/AIDS between rural and urban women in rural areas. Though half of the rural women have no knowledge about HIV/AIDS, the urban women have known about HIV/AIDS approximately each 8 out of 10 women in Bangladesh. Chakraborty & Hazarika (2011) found that the rural and urban women had significant knowledge that play vital role. Similarly, the findings ($p < 0.000$) and ($r = 0.312$) state that this study also specified that there is a significant positive relationship between rural and urban areas women and HIV/AIDS knowledge level. At least one fifth of young girls have knowledge and understanding about transmitted HIV/AIDS and they knew that HIV/AIDS could be spread through breast feeding and mostly 54 percent have knowledge that it can be conveyed through blood, injecting drugs and bodily fluid, which was also

HIV/AIDS knowledge for women in Bangladesh found in the study (Saada et al., 2013). In this study, around 77.9% of women knew that HIV/AIDS can be transmitted by breastfeeding. Comparatively, 90.9 and 83.1 percent have knowledge that HIV/AIDS is spread through unsafe blood transfusion and using an unsterilized needle or syringe. The HIV/AIDS knowledge is greatly associated with the women's age, place of residence, education, husband's education, income and occupation. Contrary to the expectation, the ($p < 0.000$) and ($r = 0.477$) show that there is a statistically positive significant relationship between the respondents' family income and HIV/AIDS knowledge. As a socio-demographic determinant, the occupation of the respondent ($r = 0.144$) had a positive relationship to HIV/AIDS knowledge at (5%) level. But Alwafi, et al. (2018) notified that a great variation between the working participants in the medical sector and other working sectors (5.77 versus 5.06, $p < 0.0001$). The previous study stated that the socio-demographic factors like age, place of residence, education, husband's education, income, religious status and occupation are also significantly associated with the knowledge of HIV/AIDS (Chakraborty & Hazarika, 2011; Mondal et al., 2016; Yaya, et al., 2016). These findings are consistent with the association and correlation which showed significant positive association between education and HIV/AIDS related knowledge among women. The respondent's socio-demographic determinants age, education, residence, monthly family income and expenditure had positive significant relation with the knowledge of HIV/AIDS. Though the purpose of the study was to identify the determinants of HIV/AIDS knowledge among women, it included the special prevention knowledge and procedure for reducing HIV/AIDS patients. The participants of rural areas were less educated than those of the urban areas, so the rural areas have scores which were more in the urban residential areas. Though the health care center remains in every study area, the expected knowledge level was so low. Hence, the health institution should be aware institutions to increase the knowledge level of HIV/AIDS.

Conclusion

This study was designed to investigate the determinants of HIV/AIDS knowledge among women in Khulna District in Bangladesh. The findings revealed potential determinants influencing HIV/AIDS knowledge among women. Education, religion, residence and age of the respondents were significantly associated with the knowledge of HIV/AIDS. Most women have heard about HIV/AIDS and a negative perception of the route of transmission exists among women. Women's are more vulnerable because of lack of access to resources as well as discrimination. On the contrary, education is a vital way of reducing gender inequality and can also be a sustainable route to increasing HIV/AIDS knowledge. A statistically significant association was found in rural urban residences with HIV/AIDS knowledge. Hence, rural women are less expected to enjoy healthcare and treatment facilities compared to urban areas. People are less likely to be eager for STDs related counseling and treatment. Despite adequate knowledge among women, misconceptions of HIV/AIDS transmission were found.

Negative perceptions and practices regarding HIV/AIDS positive patients were also found. Therefore, we recommend that HIV/AIDS prevention programs need a lot to increase awareness and make clarification about the misconceptions regarding the means of transmission of the disease. Consequently, special education programmers with specific intermediations are mentioned to increase HIV/AIDS knowledge among women.

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