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Knowledge, Attitude and Perception about HIV/AIDS among the Wives of Migrant Workers of Muzaffarpur District in Bihar

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Abstract

Background: There is limited evidence on the knowledge, attitude and risk perception related to HIV/AIDS among the wives of migrant workers in India.

Method: We conducted this study in 850 wives of migrant workers in age group of 15-45 years were selected randomly from 34 out of 1811 villages using two-stage cluster sampling method. A total of 132 wives of migrant workers who reported prior awareness about HIV/AIDS, were interviewed.

Result: Only 16% wives of migrant workers had ever heard of HIV of whom 72% had correct knowledge such as condoms provide protection from HIV (80%), sharing needle/syringe (91%), single sex-partner (75%) and blood test before transfusion (70%). The overall reliability coefficient (Cronbach's alpha=0.78) of 18-items related to knowledge regarding transmission and prevention of HIV showed a high level of consistency of response. Nearly 85% of the wives perceived themselves and their husbands at very low level of risk of HIV infection. In addition, only 8 women had used condoms during sex with their husbands.

Conclusion: Intervention strategies in India should target wives of migrant workers, as well as their husbands for increasing HIV knowledge and awareness. Specifically, the wives of migrant workers need to be empowered appropriately perceiving the risk of infection and use of condoms.

Keywords: Migrant workers; HIV knowledge; HIV risk perception; India

Introduction

The official estimates of HIV cases in India reached 2.39 million in the year 2010 of whom 39% were women amounting to 0.93 million of the total [1]. Despite of the decline in overall disease prevalence during the period 2000-09, the prevalence among women continued to remain high [2,3]. Several socio-economic factors predispose Indian women for acquiring HIV/AIDS infection [4,5]. These include early marriage, illiteracy, financial dependence, violence and sexual abuse against women [6,7]. A large proportion of the women have poor access to information and education [8]. It is also suggested that knowledge of HIV is greater in better educated and from higher socio-economic classes compared to among the general population [9].

The National Family Health Survey, Phase-3, conducted by the Ministry of Health in India reported low level of knowledge about HIV infection among women as one of the factors promoting spread of HIV infection [10,11]. Earlier reports indicate that empowerment of women is fundamental in HIV/AIDS prevention in India [4]. The studies indicate that the risk for women was high in young and poor urban widows, as well as in those who have suffered sexual violence [4].

The HIV epidemic in India varies from state to state and across special population groups. Specifically, there is no evidence available regarding sexual behavior and risk profile among married women of migrant workers. We explored knowledge, attitude and risk perception related to HIV/AIDS among the wives of migrant workers, and in-depth investigations among those who had prior information about HIV/AIDS, using structured interviews assessing interpersonal, social and cultural context of the reported behaviors.

Methods

A community based cross-sectional survey was conducted among 15-45 years old wives of migrant male workers living in Muzaffarpur district, Bihar for at least six months, and without any known cognitive disability. The study population consisted of married woman who led a conjugal life for at least one month and had sexual contacts whenever their husbands were available. This sample comprised of wives of migrant male workers of Muzaffarpur district in Bihar, India during 2012-13. Two-stage cluster sampling method was used taking village as cluster and eligible wives as the secondary unit. Out of 1811 villages in the district, 34 villages were selected as primary sampling unit (PSU), and from each cluster 25 wives of migrant workers were selected randomly from a sampling frame of migrant worker households in each village. A pre-tested structured questionnaire was administered to all 850 wives for collecting the basic information.

Trained female investigators conducted face-to-face interview to know whether women heard about HIV/AIDS before this interview or not. Finally, a total of 132 wives of migrant workers, who reported prior awareness about HIV/AIDS during the survey, were interviewed for HIV/AIDS-related knowledge, attitude and risk perceptions.

Knowledge was assessed using an 18-item question, which included knowledge on ways of getting infection, myths, treatment and prevention of HIV/AIDS. The responses were binary variable (Yes or No). Attitude was assessed using a 16-item question towards HIV/AIDS and with HIV/AIDS patients. It was a 3-scale question (Agree, partially agree and disagree). Risk perception was assessed on the basis of a 4-item question about women and theirs husband. Risk behaviours were also assessed.

Ethical issues

The University of California, Los Angeles (UCLA) Institutional Review Board approved this study (IRB#11-000341; Version: G09-08-032-01; date - 04/01/2011).

Statistical analysis

The data was analyzed using Stata version10 (Stata Corp, Houstan, Texas, USA). Firstly univariate analysis was conducted for each variable to find missing observations or non-responded items in the given data set. Earlier in the course of the survey, we took all efforts to minimize missing values and repeating the interviews in all villages again for those individual records showing missing values. Variables for correct response of items related to Knowledge about HIV transmission and prevention, and adding up raw score as created attitude responded during the interview for measuring the correct knowledge and attitude. We performed factor analysis using the extraction by principal component method and varimax rotation for measuring knowledge of and attitude towards HIV of the wives who had reported knowledge about HIV/AIDS [12]. First we checked whether the data is suitable for factor analysis or not using Kaise-Meyer-Olkin Measure of sampling adequacy, and Bartlett's test of spherecity, which is a chi-square test. These two conditions were adequate for applying factor analysis for all three construct. Cronbach's alpha was computed for knowledge items related to transmission and prevention and for attitude in order to measure the reliability and consistency of the items. We performed factor analysis separately for making assessment about "Knowledge related to transmission" based on 10-items and "knowledge related to prevention" based on 8-items in order to assess the unknown variables or factors.

Results

Knowledge of women regarding HIV/AIDS: Knowledge was assessed using 18-item questions, which included knowledge on ways of infection, myths, testing services, transmission, and prevention of HIV/AIDS. For knowledge, each right response was given a score of 1 while a wrong or unsure response was scored 0, so that the total scores could vary between 0-18. Knowledge scores from 0 to 10 were considered poor knowledge while knowledge scores more than 10 was considered good knowledge regarding HIV/AIDS. Overall, 110 (80%) of the women felt that HIV-infection could be avoided or one could protect oneself from getting HIV-infection. Seventy per cent had correct knowledge about vertical transmission, but only 32% had correct information about exclusive breast-feeding. On performing bivariate analysis using knowledge level with other socio-demographic and economic factors like age, educational status, religion, caste and living standard index of the women who responded about HIV. Overall, 72% of the respondents had good knowledge of HIV having total score more than 10. Except caste (subgroup within a religion), none of the demographic factors were found significantly associated with knowledge level about HIV/AIDS (chi square tests; $p>0.05$) (Table 1). The result of factor analysis for 8-items related to knowledge about prevention is presented in Table 2. Knowledge related to prevention, was explained by two factors, i.e. Factor-1 indicated response in favor of pertinent preventions whereas factor-2 indicated response in favor of not very pertinent prevention. Both these two factors had "eigenvalues" more than 1, and with 97% cumulative proportion of variance, thus satisfying the retention criteria of factors (Table 2). Further, the results showed that the first five items had reasonable loads on first factor, whereas last three items had reasonable load on factor-2. The reliability coefficient of 8-items variables in terms of Cronbach's Alpha, was nearly 0.60, indicating a fair good level of consistency among the response of each items. However, high uniqueness values of each item are indication of low predictability of around 40%. (Not in table) The overall reliability coefficient of 18-items taken together was about 0.78, showing a high level of consistency of response related to knowledge regarding transmission and prevention of HIV.

Factors	Knowledge Level		Total (N)	Mean ± SD	p-value*
	Good Knowledge (>10) n (%)	Poor Knowledge (0-10) n (%)			
All	95 (72)	37(28)	132	12 ± 2.45	
				Median=12	
				IQR=10-14	
Age group					
15-24	42(79)	11(21)	53	12.35 ± 2.08	0.19
25-34	40(70)	17(30)	57	11.91 ± 2.52	
35-49	13(62)	9 (38)	21	11.40 ± 2.87	
Education					

Literate	79(71)	32(29)	111	13.0 ± 2.37	0.39
Illiterate	16 (76)	5 (24)	21	12.2 ± 2.27	
Religion					
Hindu	82 (71)	34(29)	116	11.9 ± 2.37	0.14
Muslim	13 (81)	3 (19)	16	12.7 ± 2.04	
Caste					
General	2 (50)	2 (50)	4	10.75 ± 2.87	0.02
OBC	64 (80)	16(20)	80	12.46 ± 2.21	
SC	29 (60)	19 (40)	48	11.35 ± 2.37	
Living Index					
Low	66 (58)	48 (42)	114	11.97 ± 2.37	0.9
Medium	10 (59)	7 (41)	17	12.0 ± 2.12	
High	1 (100)	0	1	16	
*Chi-square test; significant at the 0.05 level					

Table 1: Distribution of knowledge level and mean knowledge scores by socio-demographic and economic characteristics.

Factor	Eigenvalues	Difference	Proportion	Cumulative
Factor 1	1.5696	0.44818	0.5654	0.5654
Factor 2	1.21145	0.34341	0.4039	0.9639
Factor 3	0.778	0.67653	0.2802	1.2495
Factor 4	0.10152	0.16778	0.0366	1.2861
LR test: independent vs. saturated: $chi^2(28)=236.03$ Prob>$chi^2=0.0000$				

Table 2: Factor Analysis of 8-items questions pertaining to knowledge about prevention of HIV among wives of migrant workers.

Attitude of women towards HIV/AIDS

In order to assess the attitude of women towards HIV/AIDS, a set of 16-questions were asked on a 3 point-scale (agree, partial agree and disagree). Table 3 presents the distribution of responses of 132 women for each question pertaining to their attitude. The majority of the women (78%) believed that only immoral behavior of the persons put them at high risk of getting HIV infection. In order to get overall impression about the attitude of women based on 16-questions, responses were converted into raw score for assessing positive response, with having minimum score of 16 and maximum score of 48. The median score was 31 (Range: 22-37).

Statement	Number responding (%) who agree or disagree with the statement		
	Agree (%)	Partially Agree (%)	Disagree (%)
1. People get HIV/AIDS due to Immoral behavior	103(78)	27(20.5)	2(1.5)
2. PLWAH have a right to decide who should know it	73 (55.3)	50(37.8)	9 (6.8)
3. Sex workers only women to worry about HIV	24 (18.2)	103 (78)	5 (3.8)
4. Men who go to sex workers or use drugs only men who have to worry about getting HIV/AIDS	84 (63.6)	47 (35.6)	1 (0.75)
5. Willing to take care of HIV Infected relatives	36 (27.4)	51 (38.6)	45 (34)

6. People with HIV/AIDS should continue living with their family	38 (28.8)	52 (39.4)	42 (31.8)
7. Sharing Meal with HIV infected person	43 (32.6)	55 (41.6)	34 (25.8)
8.Sending children to school with HIV-children	40 (30.3)	69 (52.3)	23 (17.4)
9. HIV infected teacher should continue teaching	42 (31.8)	64 (48.5)	26 (19.7)
10. Maintain secrecy of family member HIV-status	79 (60)	43 (32)	10(8)
11.Moving in a home with HIV-family neighbor	40 (30)	35 (26.5)	57 (43.2)
12. HIV/AIDS people should not be allowed to continue their work	37 (28)	22 (16.6)	73 (55.4)
13. HIV/AIDS people should not be allowed to participate social function	31 (23.5)	30 (22.7)	71 (53.8)
14. HIV/AIDS infected couple should not plan for the next pregnancy	99 (75.1)	22 (16.6)	11 (8.3)
15. HIV infected mother should not breast feed	90 (68.2)	33 (25)	9 (6.8)
16. HIV/AIDS infected women should not be allowed for tattooing	53 (40.2)	63 (43.7)	16 (12.1)
Cronbach's Alpha for 16-items=0.875			

Table 3: Distribution of correct attitude of wives of migrant workers of Muzaffarpur district towards HIV/AIDS.

We assumed that any values above median score of the total possible score can be considered as a positive attitude of the respondents. Attitude scores from 16-30 were considered as negative attitude and score above 30 were considered as positive attitude. On examining the attitude in relation to various socio-demographic and economic characteristics, 58% of the respondents had positive attitude towards HIV/AIDS and patients with HIV/AIDS. Nearly 55% women felt that those suffering from HIV/AIDS should have all the rights to reveal their infection status to others, which showed a high positive attitude towards HIV/AIDS patients. Women had positive attitude towards sending their children to schools having HIV-infected children (83%), HIV infected teacher should continue their teaching (80%), and sharing meal with infected person was safe (75%).

More than 50% women felt that HIV infected persons should be allowed to continue their work and to participate in social functions, indicating a positive attitude towards HIV infected persons. The majority of the women (75%) had the opinion that HIV-infected couples should not plan a pregnancy. Many women had the opinion that HIV-infected mother should avoid breast feeding because of risk of transmission of infection from mother to child through milk. Only 7% thought that HIV-infected mother should continue breast-feeding their babies. Mean attitude scores were not significantly different ($p>0.05$) by age, education level, religion, and living standard index but were for caste ($p=0.02$) (Table 4). The range of factor loading of each item was 0.3 to 1. Also, the overall lower uniqueness showed reasonable predictability, nearly 65%, of the factor model. The reliability coefficient of 16-items variables in terms of Cronbach's Alpha, was nearly 0.875, indicating an excellent level of consistency among the response of each item (Table 5).

Factors	**Attitude Level**		**Total (N)**	**Mean ± SD**	**p-value***
	Positive attitude (>30 score) n (%)	**Negative attitude (16-30 score) n (%)**			
All	77 (58)	55(42)	132	31 ± 4.07 Median=31 IQR=21-35	
Age Group					
15-24	31(58)	22(42)	53	31.13 ± 3.99	0.49
25-34	35(62)	21(38)	56	31.41 ± 3.93	
35-49	11(48)	12 (52)	23	30.65 ± 4.71	
Education					
Literate	65(58)	46(42)	111	31.14 ± 4.02	0.54
Illiterate	12 (57)	9 (43)	21	31.28 ± 4.42	

Religion					
Hindu	70 (60)	46(40)	116	31.14 ± 4.13	0.28
Muslim	7 (44)	9 (56)	16	31.31 ± 3.78	
Caste					
General	2 (50)	2 (50)	4	30.0 ± 5.83	0.85
OBC	48 (60)	32(40)	80	31.45 ± 3.82	
SC	27 (56)	21 (44)	48	30.79 ± 4.38	
Living Index					
Low	64 (56)	50 (44)	114	31.10 ± 4.18	0.77
Medium	11 (65)	6 (35)	17	31.71 ± 3.12	
High	1 (100)	0	1	31	
*Chi-square test; significant at the 0.05 level					

Table 4: Distribution of attitude level and mean attitude scores by socio-demographic and economic characteristics.

Statement	Factor 1	Factor 2	Uniqueness
1. People get HIV/AIDS due to Immoral behavior	-0.3827	0.3694	0.5596
2. PLWAH have a right to decide who should know it	0.2102	-0.126	0.6978
3. Sex workers only women to worry about HIV	0.123	-0.072	0.7148
4. Men who go to sex workers or use drugs only men who have to worry about getting HIV/AIDS	-0.3368	0.234	0.6172
5. Willing to take care of HIV Infected relatives	0.7888	-0.103	0.2329
6. People with HIV/AIDS should continue living with their family	0.8407	-0.0733	0.135
7. Sharing Meal with HIV infected person	0.8413	0.1057	0.1923
8.Sending children to school with HIV-children	-0.7874	0.3839	0.1192
9. HIV infected teacher should continue teaching	0.776	0.2905	0.1406
10. Maintain secrecy of family member HIV-status	-0.2974	0.3118	0.7208
11.Moving in a home with HIV-family neighbor	0.8084	-0.1639	0.2584
12. HIV/AIDS people should not be allowed to continue their work	0.6562	0.3943	0.1653
13. HIV/AIDS people should not be allowed to participate social function	0.6657	0.4507	0.1722
14. HIV/AIDS infected couple should not plan for the next pregnancy	0.3983	-0.4679	0.4904
15. HIV infected mother should not breast feed	0.4125	0.5888	0.3244
16. HIV/AIDS infected women should not be allowed for tattooing	-0.3105	0.395	0.5955

Table 5: Factor loadings (pattern matrix) and unique variances of all the components of attitude of women.

Discussion

Our results indicate that 16% wives of migrant workers had ever heard of HIV of whom 72% had correct knowledge. Our study is in conformity with a study of thirteen states of India indicating 17% of women had ever heard of HIV/AIDS [9]. The knowledge about mother-to-child transmission, high risk among sex workers and risk among men with high-risk behaviors was also very high. However, most of the women advocated against breast-feeding because they felt that it could transmit infection from mother to child. Further, a high proportion of women had incorrect knowledge about modes of transmission. Our study reports that nearly 83% believed that mosquitoes could transmit HIV in conformity with results from Iraq

[13,14] but distant from Port Moserby with 36% of women attributing to mosquitoes [15]. Another myth about HIV, was observed by our study was that nearly 60% of women informed that eating nutritious food provides protection from HIV infection. There is a need to develop a strategy to target these women to eliminate these kinds of myths in relation to transmission and prevention of HIV/AIDS because these women can be educated easily compared to those who have no knowledge about HIV/AIDS.

The study showed that nearly 58% of women reporting knowledge about HIV/AIDS had a positive attitude towards HIV/AIDS and towards HIV/AIDS patients. These women were found to be sympathetic towards HIV/AIDS patients as majority of them had opinion that HIV/AIDS person should continue living with their family, ready to share meal, allowing their children to visit school with HIV-infected children and infected teacher should continue teaching. The high proportion of positive attitudes among women could be due to some level of education. Many studies have reported good knowledge on HIV/AIDS but along with negative attitude. In comparison with other studies in India, only 27.4% women in rural areas were aware of HIV/AIDS in Uttar Pradesh state [16] while it was 47% in urban areas of Vadodara in Gujarat [17]. Among the regions with high levels of knowledge, our study is in conformity with 96% in Pondicherry [18] and the results of district family health survey in Muzaffarpur district with 89% of women having good level of knowledge [19]. A clinical study in Vellore, Tamil Nadu reported that 29% of the women attending a medical outpatient department for any illness were aware of AIDS [20].

We observed that 85% of these women perceived themselves to be at very low risk of getting HIV infection. Eighty per cent of these women thought that their husbands were also at low risk. Married women in India generally have a low risk perception for HIV despite high-risk behavior of their husbands [3,4,21-23]. Wives of migrant male workers may be no different and therefore may be unlikely to protect themselves from infection from their husbands. Also, young women are biologically more vulnerable to HIV/AIDS infection [24]. Early marriages in rural areas also pose special risks to young women, because in India and especially in Bihar, almost 50% of girls are married by the time they are 18 years of age [7,11,25]. Marriage at young age and early sexual debut are considered risk factors for HIV transmission, especially among the impoverished and illiterate section of the society [4,11,26-28]. In addition, very few women (less than 5%) were using condoms and most common reason quoted was dislike by partners. Low proportion of condom use with migrant workers could be considered as highly risky as because nearly 1% of them in Bihar were found HIV positive in a recent study [29]. The national estimate about the HIV prevalence among migrant workers in 2011 was 2.36% [29]. Most of these migrant workers have no knowledge about their HIV status. In such situation low use of condoms can make the wives more vulnerable to HIV infection [30].

Strengths of the study

This is the first epidemiological study conducted in the most vulnerable group of women comprising of wives of rural single male migrant workers. Our results indicate that there is an imperative need to convince vulnerable women that they are at risk and should take appropriate precautions.

Limitations of the Study

The main limitation of the study is that all information, especially sensitive information, was collected through structured interviews. The overall sensitivity of the response is considered to be around 55-65% on average. Therefore, we could not validate the response related to sexual behavior. Measurement error could be an important source of bias in this study which generally occurs in this kind of survey when respondents are supposed to answer questions related to their personal sexual behavior or sensitive behavior [31].

Recommendations

Despite limitations, our study supports the need for empowerment of women to understand about safe practices. Married women whose husbands are migrant workers should be targeted for special interventions. Given that the general level of awareness of the women was excellent, more widespread education is needed for both migrant workers and their wives in India. Improving the knowledge regarding condom use and appropriate risk perception by women could be an effective tool to reduce the HIV burden among married women. Intervention strategies need to emphasize respect for wives of migrant workers. Specifically, wives made to be aware by program managers and health system that it is their best interest and of family that they should use protection them from infection with HIV and other STIs by their husbands. Thus, effective condom use needs to be emphasized in wives of migrant workers.

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