Original Article

Human Immunodeficiency Virus Related Knowledge, Risk Perception and Practices among Married Women of Reproductive Age: A Cross-sectional Study from Mid-western Development Region, Nepal

Gyawali K, Paneru DP[1], Jnawali K[2], Paudel DP[3], Joshi KR[4], Paudel M[5]

Department of Health Research, School of PMER, Kathmandu, Nepal, [2]Department of Health Service, Nepal Red Cross Society, National Headquarter, Kathmandu, Nepal, [1]Department of Public Health, School of Health and allied Sciences, Pokhara University, Kaski, Nepal, [4]Department of Pharmaceutical Sciences, School of Health and allied Sciences, Pokhara University, Kaski, Nepal, [3]Jawaharlal Nehru Medical College, KLE University, Belgaum, Karnataka, India, [5]Department of Obstetrics and Gynecological Nursing, Institute of Nursing science, KLE University, Belgaum, Karnataka, India

Address for correspondence:
Mr. Damaru Prasad Paneru,
Department of Public Health,
School Health and Allied Sciences,
Pokhara University, Kaski, Nepal.
E-mail: damaru.paneru@gmail.com

Abstract

Background: Despite the implementation of anti-human immunodeficiency virus (HIV) interventions, it has continued to spread from high risk to the low risk population population with the devastating social, economic and health consequences. **Aim:** The aim of the following study is to identify HIV related knowledge, risk perceptions and practices among married women of reproductive age (MWRA) in Mid-Western Development Region, Nepal. **Subjects and Methods:** A community based, cross-sectional study was conducted during May-December 2010 among 618 MWRA in Mid-western Development Region, Nepal. Multistage random sampling was followed wherein four districts, representing each ecological zone were selected in the first stage. Nine Village Developments Committees with the total 81 clusters were selected in the second and third stages. Finally, 7/8 participants/cluster were selected randomly. Household interviews were conducted using pretested structured questionnaire. Data were analyzed by SPSS 16.0 (SPSS Inc. Chicago, IL, USA). Percentages, mean, Chi-square value and odds ratio were calculated. **Results:** Nearly three quarters (434/618) of all participants had heard about the HIV. Radio was the most common source of the information 73.3% (318/434) amongst all sources. Unsafe sex 55.3% (240/434), infected blood transfusion 33.2% (144/434), needle sharing 24.7% (107/434) and mother to child transmission 4.1% (18/434) were reported modes of HIV transmission. Condom use during extramarital sex 51.8% (225/434), use of sterilized syringes 24.2% (105/434), restricting sex within couple 22.6% (98/434) and blood safety 20.3% (88/434) were reported HIV preventive measures. Extramarital sex, needle sharing and sharing of the razors/blades were perceived to be the risk behaviors. About 4.9% (30/618) had extramarital sexual experience amongst all participants. Only a quarter (8/30) of those who had extramarital sex used condom regularly. **Conclusions:** Almost half of the MWRA had limited awareness on HIV transmission and preventive measures. There was poor HIV preventive practices; indicating knowledge-behavior gaps. Awareness raising and behavior change interventions are recommended.

Keywords: Human immunodeficiency virus, Knowledge, Married women of reproductive age, Nepal, Practice, Risk perception

Access this article online	
Quick Response Code:	Website: www.amhsr.org
	DOI: *****

Introduction

The human immunodeficiency virus (HIV) infection continued to be the pandemic since the first case of acquired immune deficiency syndrome (AIDS) was identified in 1981.[1] Multiple modes of transmission and behavioral predominance further exacerbated its spread, creating a challenge for prevention.[1-3] Despite practice of multidisciplinary

interventions, HIV continued to spread from high risk to the low risk population with devastating social, economic and health consequences.[1]

Globally, women living with HIV infection remained stable at 50%.[4] Since the detection of the first AIDS case in 1988 in Nepal, it evolved from low prevalence to concentrated epidemic.[5] Injecting drug users, female sex workers, men who have sex with men and their sexual partners are most at risk whereas others are considered low risk population. Nevertheless, epidemiological concerns are in the spread of HIV infection from high risk to the low risk population.[1-3] Nepal Demographic and Health Survey (2011) revealed that never-married women of reproductive age (MWRA) were more likely to have heard about AIDS than ever-married women and knowledge of AIDS was much higher among urban than rural respondents.[6]

Except commercial sex workers and antenatal women, HIV/AIDS behavioral researches have neglected women as a focus of research; consequently, there has been inadequate understanding of women's vulnerability to HIV.[7] Furthermore; some of the norms promoting men's multiple partnership and gender power role in the society has increased the women's susceptibility to HIV infection.[7] Hence, this study was carried out to (i) assess the knowledge on HIV transmissions and preventive measures (ii) explore HIV related risk perceptions and practices of a married woman of reproductive age in rural mid-western development region of Nepal.

Subjects and Methods

This was a community based descriptive cross-sectional quantitative study carried out among MWRA in the Midwestern Development Region of Nepal during May-December 2010. Altogether, 618 MWRA were selected for this study with the consideration of the design effect (2) at 5% tolerable error [$n = (z^2p*q/d^2)*DE$]. Multistage random sampling procedure was used. In the first stage, four districts were selected out of 15 districts of the region representing from each of the three ecological zones; plane (Bardiya), hill (Salyan and Pyuthan) and mountains (Jumla). Then, three Village Developments Committees (VDC) from plane and two VDCs from each of the Hill and Mountain districts were selected randomly. In third stage, 81 clusters (1 VDC = 9 wards) were selected and finally, 7/8 participants from each cluster were selected randomly from the alphabetical list of the mothers maintained by Female Community Health Volunteers (FCHV). Information was collected by face-to-face interview with consenting mothers using preformed and pretested structured interview schedule. 10% of the filled questionnaires were cross checked by supervisors and Principal Investigator. All data were entered into MS access and then analyzed by SPSS 16.0 (SPSS Inc. Chicago, IL, USA). Percentage, mean, median and standard deviations were calculated wherever applicable. Chi- square test was used to test significance difference between those with and without knowledge of HIV and the Odds ratio was calculated to observe the likelihood of the existence of knowledge. Ethical clearance was taken from the institutional ethical committee of University Grants Commission, Nepal.

Results

Socio-demographic characteristics

Table 1 shows socio-demographic characteristics of the participants. Majority 60.4% (373/618) of the study participants were 20-29 years of age followed by nearly one-fifth (116/618) with 30-39 years of age while more than one-tenth participants (70/618) were below 20 years. More than two-third (255/618) participants were Brahmins/Chhetri followed by 26.5% (164/618) were Thraru (Ethnic group). With the exception of 1%, almost all were Hindus (612/618). Nearly three-fifth (360/434) had Joint families. Majority 79.1% (489/618) of all participants had their annual family income (NRs) ≤100,000.

Knowledge about HIV infection

Majority 71.2% (434/618) of participants had heard about HIV while more than a quarter (184/618) had never heard about HIV. Of those who have heard, nearly three quarters 73.3% (318/434) heard form Radio/FM followed by FCHV 30.0% (130/434). Almost one-fifth (82/434) knew from the text book while about one-tenth (55/434) had heard from the peers/ teachers/or television. More than half (240/434) reported, sexual relation with an infected partner followed by infected blood

Table 1: Socio-demographic characteristics of the participants (*n*=618)

Description	Numbers of participants	Percentage
Age (in years)		
<20	70	11.3
20-29	373	60.4
30-39	116	18.8
≥40	59	9.5
Caste		
Dalit	100	16.2
Tharu	164	26.5
Janajati	79	12.8
Chhetri/Brahmin	255	41.3
Magar	20	3.2
Religion		
Hindu	612	99.0
Buddha/Christian	6	1.0
Type of family		
Nuclear	258	41.7
Joint	360	58.3
Annual income in nepalese rupee		
≤100,000	489	79.1
100,001-200,000	79	12.8
>200,000	50	8.1

Mean age: 27.7 (9.2) years, Median annual income: 50,000.0, 1$: 84 (NRs)

transfusion 33.2% (144/434), needle sharing 24.7% (107/434) and mother to child transmission 4.1% (18/434) are the modes of HIV transmission while more than one out of every ten (44/434) replied that they did not know about the modes of HIV transmission. Condom use during extramarital sex 51.8% (225/434), safe blood transfusion 20.3% (88/434), restriction of sex within faithful partners 22.6% (98/434), use of sterilized syringes/instruments 24.2% (105/434) were reported as the preventive measures of HIV transmission [Table 2].

HIV related risk perceptions and practices

Most of the participants 72.8% (316/434) perceived that commercial sex workers are the risk population followed by injecting drug users 60.4% (262/434), transportation workers 47.2% (205/434), spouse of migrant workers 37.6% (163/434) and rickshaw pullers 38.0% (165/434) are most at risk population for HIV infection. Meanwhile, baby born to the infected mother, barbers and health workers were also reported to be the risk population for HIV infection. Majority had perceived that multiple sex partnership (300/434) followed by unprotected sex (259/434) were the most risky behaviors for HIV transmission. Moreover, injecting drug use and needle sharing, use of non-sterilized needles in the health care practices, non-screened blood transfusion and sharing of blades/razors were also perceived to be the risk behaviors. About 4.9% (30/618) had ever had extramarital sex. Consistency in the condom use was reported by only a quarter of the participants (8/30) who have ever had extramarital sexual relation while one-third of them (10/30) were inconsistent users and two-fifth 40.0% (12/30) had never had condom use during extramarital sexual activities. Almost two-fifth participants (7/18) had used condom in the last episode of extramarital sex [Table 3].

Table 2: Knowledge about HIV

Description	Number of participants	Percentage
Heard about HIV (*n*=618)		
Yes	434	71.2
No	184	28.8
Sources of information*(*n*=434)		
Television	70	16.1
Pamphlet/posters	39	9.0
Newspaper/magazine	17	3.9
Textbooks	82	18.9
Radio/FM	318	73.3
FCHV	130	30.0
Health-workers	36	8.3
Peers/Teacher	55	12.7
Group meeting	60	13.8
Others	28	6.5
Knowledge on mode of transmission*(*n*=434)		
Unsafe sex with infected partner	240	55.3
Blood transfusion	144	33.2
Needle sharing	107	24.7
Mother to child	18	4.1
Don't know	44	10.1
Knowledge about preventive measures*(*n*=434)		
Condom use in extramarital sex	225	51.8
Safe blood transfusion	88	20.3
Use sterilized syringes for medication	105	24.2
Restrict sex within couple	98	22.6
Don't know	52	12.0

*Multiple responses, HIV: Human immunodeficiency virus, FCHV: Female community health volunteer, FM: Frequency modulation

Factors influencing the knowledge about HIV

Relationship with the knowledge "heard" of HIV and its transmission with the covariates were explored by using

Table 3: Risk perceptions and risk behaviors for HIV infection

Description	Number of participants	Percentage
Perceived population at risk for HIV infection*		
Commercial sex workers	316	72.8
Injecting drug users	262	60.4
Transportation workers/drivers	205	47.2
Rickshaw pullers	165	38.0
Migrant workers	149	34.3
Spouse of migrant workers	163	37.6
Baby born to HIV infected mothers	119	27.4
Health workers	99	22.8
Barbers	64	14.7
Don't know	44	10.1
Perceived risk behaviors for HIV transmission*(*n*=434)		
Multi-partner sex	300	69.1
Extramarital sex without condom use	259	59.7
Injecting drug with needle sharing	130	30.0
Non-sterilized hospital instruments	99	22.8
Blood transfusion without screening	205	47.2
sharing of razors/blades	163	37.6
Extramarital sexual involvement (*n*=618)		
Yes	30	4.9
No	588	95.1
Condom use while having sex with extramarital partner (*n*=30)		
Always	8	26.7
Sometimes	10	33.3
Never	12	40.0
Condom use during sex with extramarital partner at last time (*n*=18)		
Yes	7	38.9
No	11	61.1

*Multiple responses, HIV: Human immunodeficiency virus

Chi-square test and corresponding odds ratio. Heard status and knowledge of mode of transmission was statistically associated with the participant's residential district and their belonging castes ($P = 0.01$) whereas, type of family, migratory status of the husband and religion are not statistically associated with their knowledge. Participants from the hill and mountain districts were 1.54 times and 1.82 times more likely having knowledge on HIV and its transmission respectively when compared with those living in plane district [Table 4].

Discussion

Majority of the participants were below 30 years of age, almost (99.0%) all were Hindus, 58.3% were living in Joint families and more than every nine-tenth had an annual income below two hundred thousand. Our findings corroborates with the results of the study conducted in Iraq.[8]

Nearly three quarters had heard about the HIV where radio/FM was the most common source of the information (73.3%). Similar studies from Asia, Africa and middle east have reported varying results (29.9-100.0%) that the women had heard about HIV with intra and inter-country variations and our findings somehow correspond to the studies form Pakistan and Nigeria.[1,3,8-13] Similarly, majority had heard from Radio followed by FCHV and preventive measures related information were more frequently heard from other sources like health care workers and newspapers. Findings of this study correspond to the Indian, Nigerian and Iranian studies cited wherein Radio, TV, health workers, friends, relatives were reported as the prime sources of HIV related information.[8,10,11,14] Unsafe sex (55.3%) followed by infected blood transfusion (33.2%), needle sharing (24.7%) and mother to child transmission (4.1%) were reported to be the modes of HIV transmission. Similar trends were observed in the studies conducted in Asia, Africa and the middle east viz. sexual transmission followed by infected blood transfusions, needle sharing and mother to child transmission were reported as the modes of transmission in decreasing orders of responses.[1,8,11-14] Condom use during extramarital sex (51.8%), safe blood transfusion (20.3%), restriction of sex within faithful partners (22.6%), use of sterilized syringes/instruments (24.2%) were reported as the preventive measures of HIV transmission. Study findings are similar to the studies conducted by Haider *et al*., Chirwa *et al*., Awusi and Anyanwu, and Burgoyne and Drummond.[1,9,13,15]

Commercial sex workers, injecting drug users, transport workers and migrant were the most risk population while baby born to HIV infected mother, barbers and health workers were also perceived to be at risk for the HIV infection. Similar study from Pakistan reported that multiple sexual partners, prostitutes and homosexuals; and drug addicts were reported to be the high risk population.[1] Almost 5% participants reported extramarital sexual involvement; of them, only a quarter had regularly used the condoms. Similarly, only two-fifth had used condom in their last extramarital sexual intercourse. Similar findings were reported in a Nigerian study.[14]

Ecological zone (hill and mountain vs. plane) and caste wise variation was observed to be significant while age, income, type of family, husband's migratory status were not the significant factors influencing the knowledge regarding HIV and its mode of transmission. Participants from hill and

Table 4: Association between participant characteristics and knowledge of HIV (*n*=618)

Participant characteristics	Heard about HIV		Statistics	Knowledge of mode of transmission		Statistics
	Yes	Total		Yes	Total	
District						
Hill and Mountain districts	190	413	*P*<0.01, OR=1.54, 95%, CI=1.09-2.17	110	413	*P*<0.001, OR=1.82, 95%, CI=1.19-2.82
Plane district	73	205		34	205	
Caste						
Dalit	48	100	χ^2=9.31, df=4, *P*<0. 01	28	100	χ^2=10.94, df=4, *P*<0. 01
Tharu	57	164		26	164	
Janajati	39	79		23	79	
Brahmin/Chhetri	107	255		59	255	
Magar	12	20		8	20	
Age (in years)						
≤30	200	472	OR=0.98, *P*=0.70, 95%, CI=0.53-1.15	161	472	OR=1.20, *P*=0.67, 95%, CI=0.79-3-1.35
>30	63	146		44	146	
Husband migrated for work						
Yes	146	324	OR=1.24, *P*=0.18, 95%, CI=0.90-1.70	81	324	OR=0.91, *P*=0.46, 95%, CI=0.56-1.12
No	117	294		63	294	
Type of family						
Nuclear	113	258	OR=1.09, *P*=0.59, 95%, CI=0.79-1.50	57	258	OR=0.88, *P*=0.58, 95%, CI=0.59-1.15
Joint	150	360		87	360	

OR: Odds ratio, CI: Confidence interval, HIV: Human immunodeficiency virus

mountain districts were found to be more knowledgeable than the participants living in plane district. Similar findings were reported in NDHS, in which knowledge of HIV/AIDS was observed to be higher among women in the hill zone.[6]

Limitations of the study

Study was limited to the selected parameters and based on the verbal information only.

Conclusion

More than 70% respondents heard about HIV and less than half of them had knowledge about the mode of its transmission. Radio/FM was the major (73.3%) source of information. Avoiding extramarital sex and/or condom use, screening of blood before transfusion, avoiding sharing of needles were reported preventive measure of HIV. Consistency of the condom use was reported to be low among those who have had extramarital sex. Gender specific awareness raising and behavior change interventions might increase women's awareness on HIV, risk perceptions and preventive behaviors.

Acknowledgments

The authors would like to extend sincere thanks to the University Grants Commission, Nepal for financial support for this study.

References

1. Haider G, Zohra N, Nisar N, Munir AA. Knowledge about AIDS/HIV infection among women attending obstetrics and gynaecology clinic at a university hospital. J Pak Med Assoc 2009;59:95-8.
2. Nair R, Nair SS, Malhotra S, Sachdeva A. Shifting trends of HIV epidemiology among most at Risk groups in India. Int J Med Sci Public Health 2012;1:18-31.
3. Ho CF, Loke AY. HIV/AIDS knowledge and risk behaviour in Hong Kong Chinese pregnant women. J Adv Nurs 2003;43:238-45.
4. UNAIDS. UNAIDS World AIDS Day report, 2011. Available from: http://www.unaids.org/en/dataanalysis/knowyourresponse/globalaidsprogressreportig. Accessed on 10-11-2012.
5. Department of Health Service, Nepal. Annual Report-2067/68 (2010/2011). Management Division, Department of Health Services, Teku, Kathmandu.
6. Ministry of Health and Population Nepal, New ERA, Macro International Inc., 2007. Nepal Demographic and Health Survey 2011. Kathmandu, Nepal: Ministry of Health and Population, New ERA and Macro International Inc., Calverton, Maryland, USA.
7. Shedlin MG, Fitzgerald A, Bautista L. Risk factors for HIV among housewives in San Salvador. AIDS Anthropol Bull 2000;12:1-9.
8. Siziya S, Muula AS, Rudatsikira E. HIV and AIDS-related knowledge among women in Iraq. BMC Res Notes 2008;1:123.
9. Chirwa E, Malata A, Norr K. HIV prevention awareness and practices among married couples in Malawi. Malawi Med J 2011;23:32-7.
10. Pallikadavath S, Sreedharan C, Stones RW. Sources of AIDS awareness among women in India. AIDS Care 2006;18:44-8.
11. Negi KS, Khandpal SD, Kumar A, Kukreti M. Knowledge, attitude and perception about HIV/AIDS among pregnant women in rural area of Dehradun. JK Sci 2006;8:133-8.
12. Chatterjee N, Hosain GM. Perceptions of risk and behaviour change for prevention of HIV among married women in Mumbai, India. J Health Popul Nutr 2006;24:81-8.
13. Awusi VO, Anyanwu EB. HIV/AIDS-related knowledge and attitudes of pregnant women in Delta state, Nigeria. Benin Journal of Postgraduate Medicine2009;11:15-20.
14. Ogbe JO. Knowledge, sources of information and practice of condom use in the prevention of Sexually Transmitted Infections (STIs) among Rural Dwellers in Delta State, Nigeria. Ethno Med 2011;5:107-14.
15. Burgoyne AD, Drummond PD. Knowledge of HIV and AIDS in women in sub-Saharan Africa. Afr J Reprod Health 2008;12:14-31.

How to cite this article: ????

Source of Support: Authors would like to extend sincere thanks to the University Grants Commission, Nepal for financial support for this study. **Conflict of Interest:** None declared.