

# Sexually Transmitted Infection among Migrant People and Their Wives in Far Western Nepal

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**Abstract Background:** More than 340 million cases of curable sexually transmitted infections (STIs) were estimated to have occurred worldwide in 1995. Previous studies have shown that the presence of other concomitant STIs increases the likelihood of HIV transmission. Migrant people were a high risk group in acquiring HIV and others STI. Nepal is facing rapid increases prevalence among high-risk groups such as sex workers, injection drug users and migrant. Western part of Nepal faces the same threat. The aim of our study was to estimate the prevalence of STIs, and assess knowledge and risk behaviours related to STIs, among migrants' people and their wives in Far Western, Nepal. **Materials and Methods:** A cross-sectional analytical study was carried out in migrant labors, their wives and women with STD syndromes in year 2009 at the Department of Microbiology, Siddhanath Science Campus, Mahendranagar, Kanchanpur. A total of 208 participants were recruited as they attended VCT centers at Kanchanpur. A structured questionnaire addressing demographic information, sexual life history, sexual contacts, and knowledge and practices related to HIV/STI transmission and prevention was administered by face-to-face interview. Biological samples were obtained from all participants and tested for STIS, *Treponema pallidum*, *Neisseria gonorrhoeae*, and *Trichomonas vaginalis*, *Candida albicans* and *bacterial vaginosis*. Pearson's chi-square analysis was performed to test associations between potential risk factors and specified diagnosed infections. Seventy percent patients were wife of migrants, the highest prevalence of STIs 10% were also found among them. **Result:** A total of 208 participants were examined and 39% were positive for different causative agents of STIs. The prevalence of *T. pallidum* 2%, *N. gonorrhoeae* 0%, % *T. vaginalis* 10%, *Candida albicans* 23% and Bacterial vaginosis (describe in Table 1) 14%. The highest prevalence of STIs was found in age group 30-49 years. The prevalence of STIs was higher in male then women. Eighty percent patients knew that STIs could be transmitted through the sexual contact followed by other corrected response like infected syringe 73%, blood 71%, and mother to baby 60%, kissing 47% and mosquito bite 8%. Fifty three percent of the participants reported that they "Always use condom". Twenty one percent participants had sexual relationship with prostitute. Most of participants 64% were streaked in only one sexual partner. Twenty four percent had 2-4 sexual partners and 12% had more than four sexual partners. **Conclusions:** The result shows that migrant people are at high risk of infection. The prevalence of curable STIs are alarmingly high and emphasize the urgent need for interventions aimed at combating the spread of STIs among women in general and migrant or wives of migrant in particular. Education and outreach programs are needed to reduce embarrassment and lack of knowledge related to STIs.

**Keywords:** *sexually transmitted diseases, wives of migrants. behavior, risk factor, migration, transmission*

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## 1. Introduction

Sexually transmitted diseases (STD) continue to be major and growing public health problem in many part of world, especially in developing countries where estimated 340 million new cases of curable STIs occur each year, and 151 million of them in South and southern Asia alone [1].

STIs are among the top five disease categories and about one third of STIs globally occur among people younger than 25 years of age [2]. WHO estimated that 400,000 new cases of STIs –occur daily in the South East

Asian Region (SEAR) alone [3]. Centers for Disease Control (CDC) estimates that 19 million new infections occur each year, almost half of them among young people age 15 to 24 years [4].

STIs are also common in Nepal. The high prevalence of STI in Far Western and Mid Western regions of Nepal could be attributed to the presence of certain communities like Deuki and Badi, who are engaged in commercial sex and have been found to be suffering from STIs [5]. The prevalence of STIs increases the risk of the acquiring and transmitting HIV infections. It has been well established that women with STD syndromes are at higher risk of HIV infection. Firstly, the mode of infection of HIV and

other STIs are same. Secondly, it is easier for HIV to enter and cause infection because of dysfunction of first line of defense mechanism (for e.g. ulceration of the skin). Moreover, its transmission is 3-9 times more in patients with STD syndromes as compared to general population [6].

International evidence indicates that since migration brings about immediate changes in the occupation, social conditions and economic status of the people, it could be one of the leading factors linked to high-risk sexual behavior and STI/HIV transmission. More specifically, migration often allows them to be free from established social norms, develop a sense of anonymity and become separate from family ties. All these conditions create an environment for them to become involved in unsafe and indiscriminate sexual behavior. STIs facilitate more easily transmission of HIV virus [7].

Migration is higher in Far Western districts of Nepal than in other parts of the country [8]. The large population of migrant's wives were HIV/STI positive. Their husbands leave their home town to earn money. They engage of having sexual relationship with multiple partners and prostitutes in India [9]. HIV infection is highest in the Far West Region among the other part of Nepal [10]. Migrants, due to poverty and unemployment, are more vulnerable to such high-risk behavior and are more likely to become infected. These conditions largely apply to the Nepali male migrants in western Nepal [7].

In Kanchanpur district, poverty has caused a great number of men to migrate to India for temporary employment. However, in absence of authentic data, it is difficult to ascertain as to what extent the illness is prevalent among this high-risk group. No HIV/STI prevalence survey has yet been conducted to establish baseline data or to ascertain the extent of linkage between migration and STI transmission in the area.

Based on these data has been realized that migrant population, especially labor migrant to India was recognized with high degree of confidence. Hence, this study focused on this special population "Migrant labor" that are being at risk of the contracting and spreading this dreaded infection and disease HIV/AIDS. Kanchanpur's low economic status, illiteracy and high rate of migration along with the frequent unsafe practice with female sex workers in Indian cities make this population high vulnerable to acquiring HIV/STIs infection. So the behavior and seroprevalence study in this population not only documents the exact prevalence of STI seroprevalence in this population but also help to control the transmission of STI/HIV in general population through provision of comprehensive care and support service in collaboration with other INGOs/ Hospital located in this district. In Kanchanpur no specific study on the labor migrants is done to generate surveillance data regarding the different types of STIs including HIV/AIDS. The aim of our study was to estimate the prevalence of STIs and assess knowledge and risk behaviors related to STI among migrants people and their wives in Kachanpur.

## 2. Methodology

This cross-sectional analytical design was carried out at Department of Microbiology, Siddhanath Science Campus,

Mahendranagar, Kanchanpur, during March to June 2009. Altogether 208 samples were selected, examined and analyzed from different sites of Kanchanpur district as ART centre of Mahakali Zonal Hospital, Nepal National Social Welfare Association VCT center, HIV/AIDS camp at Jhalari VDC and Dodhara VDC patients reported as migrant, wives of migrant and others (belongs to migrant family) visited to respective sites from March to June 2009 were included in the study. Migrant's people were enrolled in the study because they were highly vulnerable to HIV/ STIs.

Blood samples, cervical swabs, endocervical swabs from women and additional urethral swabs from male were collected. The patients were selected for diagnosis of different STIs on the basis of vaginal discharge, pain in lower abdomen, chancre on genital organs and pus discharged from urethra. In case of STIs women were not eligible if they were pregnant, reported missed periods or had given birth in the previous six weeks, because of greater susceptibility to vaginal candidiasis at these times. On the day of examination, women were excluded if they were menstruating, because menstrual blood would interfere with the laboratory tests. Unmarried girls were barred to speculum examination, because it was not deemed culturally appropriate for them. The verbal and written consent was taken from each patient.

After taking informed consent, they were interviewed to fill up the prestructured questionnaire. A standard questionnaire was developed and administered to each patient on the following topics: Sexual behavior and knowledge on STI transmission was reported. Privacy was strictly maintained during the procedures, and the collected data were kept confidential. Data were coded and analyzed by using Statistical Package of Social Sciences version 16 (SPSS v 16). Chi - square test ( $\chi^2$ ) was used to compare the categorical data. The collected specimen was transported at Microbiology laboratory, Siddhanath Science Campus, Kanchanpur and specimen processing was done as per standard Microbiological operating procedure for STIs investigation.

## 3. Result

The study was carried out on 208 migrant, wives of migrant and others (belongs to migrant family) visiting to ART centre of Mahakali Zonal Hospital, Nepal National Social Welfare Association VCT center, HIV/AIDS camp at Jhalari VDC and Dodhara VDC.

Based on clinical finding 39 (19%) participants were found to have been infected with at least one of the five STIs. The illness-specific differential showed that the candidiasis was most highly infection followed by bacterial vaginosis, trichomoniasis and syphilis was 23%, 14% 10%, 2% respectively, but none of cases was positive for gonorrhoea. The prevalence of five different types of STDs was identified according to diagnostic criterion for laboratory –diagnosed STIs [6] (Table 1).

The highest numbers of participants were found in age group 15-29 years (48% ) and age group 30-48 years (48%) followed by  $\geq 50$  years and age group 0-14 years. The average age of participants' was 30 years. The highest STIS; 23 (11%) were found in reproductive age group 30-49 years, followed by the age group 15-29 years age. STIs were not found in the children below 14 years.

Out of 208 participants 40 (19%) were male and 168 (81%) were female. Male have been found higher infections of different STIs than female.

Eighty percent patients knew that STIs/HIV could be transmitted through the sexual contact followed by other corrected response like infected syringe 73%, blood 71%, and mother to baby 60%, kissing 47% and mosquito bite 8%.

Among 208 respondents, three were children and they did not have exposed to sex. Majority of 104 (51%) had

never used condom. Fifty-three (26%) respondents always used condom and 47 (23%) were did not used condom had visit to sex worker. A large number 43(21%) had prostitute as sexual partner. Two (1%) had sexual relationship with their friends and 10 (5%) had sexual relationship to others. Majority of 130(64%) were strict in single sexual partner. Forty-nine (24%) had 2 to 4 sexual partner and 24 (12%) had more than 4 sexual partner.

**Table 1. Diagnostic criterion for laboratory-diagnosed STIs [6]**

Diagnosis	Diagnosis Criteria
a. Laboratory-Diagnosed STIs	
Trichomoniasis	Positive wet mount preparation test
Gonorrhoea	Isolation of <i>Neisseria gonorrhoeae</i> from cervical culture or identification of gram- negative intracellular diplococci in Gram-stained cervical smear
Syphilis	RPR test was performed by addition of one drop of serum and antigen (reagent-1), appearances of flocculation within 8 minutes indicate positive. Positive sample was confirmed by TPHA reactive test.
b. Endogenous infections	
<i>Bacterial vaginosis</i>	Presence of at least three of the following: (a) Positive amine test (b) presence of clue cells in Gram-stained vaginal smear (c) vaginal fluid pH >4.5 and (d) Homogenous white gray discharge that stick the vaginal walls
Vaginal candidiasis	Positive culture for <i>Candida</i> with the presence of clinical sign (red inflamed tissue and curdy white discharge)

**Table 2. Laboratory Diagnosed STIs**

Types of STI	Positive cases	P-value
Syphilis : N=172	3(2%)	>0.01
Gonorrhoea: N=104	0(0%)	
Trichomoniasis: N=104	10(10%)	
Bacterial Vaginosis: N= 104	12(14%)	
Candidiasis: N=99	23(23%)	
Total	39	

**Table 3. Age group wise distribution of patients tested for different STIs**

Age group	STIs positive		Total	p-value
	Yes	No		
0-14 years	0 (0%)	3 (1%)	3 (1%)	0.207
15-29 years	14 (7%)	86(41%)	100 (48%)	
30-49 years	23 (11%)	76 (37%)	99 (48%)	
≥50 years	2 (1%)	4 (2%)	6 (3%)	
Total	39 (19%)	169 (81%)	208	

**Table 4. Sex wise distribution of STIs**

Sex	STIs		Total	p-value
	Yes	No		
Male	22 (55%)	18 (45%)	40 (19%)	<0.01
Female	17 (10%)	151(90%)	168(81%)	
Total	39 (19%)	169 (81%)	208	

**Table 5. Knowledge of transmission of STIs**

Mode of transmission	Correct answer	Incorrect answer	Do not know
Sexual contact	80 %	18%	2%
Infected syringe	73%	22%	5%
Blood	70%	23(%)	6%
Mother to baby	60%	26%	14%
Mosquito	8%	35%	57%
Kissing	47%	29%	24%
Normal contact	62%	18%	20%

**Table 6. Sexual Behavior of Studied Population (N=204)**

Sexual behavior		Frequency
Use of Condom	Never use	104 (51%)
	Some times	47(23%)
	Always	53(26%)
Types of sexual partner	Friends	2(1%)
	Prostitute	43(21%)
	Others	10(5%)
No. of sexual partners	Only one	130(64%)
	2-4 partners	49(24%)
	> Four	25(12%)

**Table 7. Distribution of Studied Population by Sub-group**

Sub- group	STIs		Total	P-value
	yes	No		
Male migrant	13(6%)	18(9%)	31(15%)	0.002
Wife of migrant	20(10%)	125(61%)	145(70%)	
children of migrant	0(0%)	3(1%)	3(1%)	
Other male*	3(1%)	4(2%)	7(3%)	
Other female*	3(1%)	19(10%)	22 (11%)	
Total	39(19%)	169(81%)	208	

\*Person belongs to migratory family

Out of 208 respondents 31(5%) were male migrant. Majority of respondents were 145(70%) were wife of migrants. Three (1%) was children of migrant. The prevalence of STIs was highest among the wife of migrants followed by male migrant.

## 4. Discussion

A total positive STIs cases were 49 % detected by examination of vaginal, endocervical swabs and serology. Where *Candida albicans* 23% was most predominant organism. The prevalence rate was followed by *G. vaginalis* 15%, *Trichomonas vaginalis* 10%, and none of them was found to be *Neisseria gonorrhoeae*. These different aetiological agents of STIs (RTIs) are highly related to each other. These all types of infection are transmitted by similar type of mode of transmission. Those finding were similar to another study conducted at Tribhuvan University Teaching Hospital Kathmandu Nepal, the prevalence of *Trichomonas vaginalis* 13.8%, *G. vaginalis* 15.59%, *Candida albicans* 23.9%, *Neisseria gonorrhoeae* 8.8%, Gram-negative intracellular diplococci 6.4%. Bacterial infections of the genital tract are common and cause significant morbidity [11]. This finding of STIs in this study is similar to another study conducted at TUTH Kathmandu Nepal, Four types of microorganisms have been identified, where most predominant organism was *Candida albicans* 25%, *G. vaginalis* 14.4%, *Trichomonas vaginalis* 12.5%, and *Neisseria gonorrhoeae* 6.7% intracellular diplococci 5.8% [12].

The high proportions of migrants were 15-29 years age group and most of them were female. In contrast to our study findings, a study done on Eastern Nepal; the average age of migrant workers were 22.5 years and majority of them were between 15-35 years of age [13]. The high numbers of participants were found in the age group 18-25 years in the study conducted in Kailali district [7]. The

highest (70%) population was found to be wives of migrant. This data suggest that most of the people of this region leave their home town to earn money as migrant laborers at this age. Male migrant may engage of having sexual relationship with multiple partners and prostitutes due to loneliness need for intimacy and sex. There they acquire STIs/HIV infection and transmit the infection to their innocent homemakers during their short visit to home. Other studies also documented that the people of this age group are more susceptibility to STIs/HIV infection. Data of National centre for AIDS and STD control (NCASC) shows that 77.6 % HIV positive people are in the age group 21-30 [14]. The large proportion of STIs positive population was 26- 35 years, the age group with the highest population was migrants. Most of the women who had RTIs were in age group 25-35 years [12]. This indicates that though age is an important determinant of STIs, migration women is also crucial factor in the spread of STIs/HIV in all age groups.

Study found that migrant labor had good knowledge on STIs/HIV. But a significant number had the misconception that one could contract STIs/HIV through mosquito bites and kissing. Almost 70% respondents fall under the categories of good knowledge, while only 15% respondents were ranked as poor knowledge. This finding was supported by study awareness and STIs/HIV risk behaviours among migrant workers in relation to STIs /HIV - a study from eastern Nepal, in which also migrants were aware regarding the transmission of STIs /HIV viz; unprotected sex (92.7%), untested blood (80.5%), infected syringe (75.6%). The commonest misconceptions were found to be; through mosquito bite (53.5%) and through normal contact were nearly 30% [12].

Sexual behavior of patients increases the risk of STIs/HIV transmission. Highest proportion (51%) were never used condom, 47% were used condoms but they ignored to use condom, when they had drunk alcohol.

which might made them transmission and acquiring of STIs/HIV. A large number 43(21%) had prostitute as sexual partner. Most of the male migrant frequently visited prostitute when they were in India. The practices of prostitute sex among male migrant was also interesting finding. They revealed one secret that they generally had unprotected sex with prostitute because they were alone (wife at home) for a long time in India and feel thought their wife and children then drunk alcohol visited prostitute for sexual satisfaction. *One participant made a statement "Male migrant in India generally to gathered and drunk alcohol, then planned to visit prostitute and may had group sex."* Female were strict within the single sex partner but few cases were involving in commercial sexual worker because they had already lost their husband. The types of high-risk sexual behavior and measures during illicit sex or unsafe sex measures were related to lack of knowledge of preventive methods (i.e. safe sex) of transmission of STIs/HIV to avoid STIs and HIV (Table 6). The most frequently reported message they noted in the study was about they didn't know the importance of using condoms when engaging in sexual activities, which accounts for 5 percent never used condom during intercourse.

## 5. Conclusion

The result shows that migrant people are at high risk of infection. STIs was higher among aged 31 years, at this age people went to India for earning and import STIs to their wife during their short visit to home. Migrant people still confused about transmission of STIs/HIV. The prevalence curable STDs are alarmingly high and emphasize the urgent need for interventions aimed at combating the spread of HIV and STDs among women in general and migrant or wives of migrant in particular. Such interventions should address social and economic factors promoting the spread of STIs/ HIV. The study reveals that STIs are significantly associated with increasing age. The statistical test suggested that, the STIs are significantly found in wife of migrants but gender is not associated to STIs, both male and female can be equally infected from STIs. There is an urgent need for provision of services to treat STDs, VCT services will be strengthened and strictly launched to migrant and their wives. Education and empowerment programmes are need that will promote condom use among migrants. In the longer terms, steps must be taken to address the social and economic pressures that migrant face. An intensive educational program should be implemented regarding the

consistent use of condoms during sex with sex workers in both India and Nepal.

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