

Epidemiological Review on Factors Determining Prevalence of HIV among Migrant Males of Nepal

V Khanal, R Karkee

Citation

V Khanal, R Karkee. *Epidemiological Review on Factors Determining Prevalence of HIV among Migrant Males of Nepal*. The Internet Journal of Epidemiology. 2012 Volume 10 Number 2.

Abstract

Migration is long standing phenomenon for Nepalese population. Migrated population are at higher risk of HIV infection. The objective of this article is to examine the risk factors that are associated with higher prevalence of HIV among migrant labours of Nepal. This review found that HIV prevalence, though decreased from 8.5% in 2002 to 1.1% in 2008, is still high among migrants. Multiple factors are associated with the risk of HIV prevalence in migrant group. The major determinants includes behavioural, social, environmental and health system capacity. Among migrants the rate of condom use was very low (17.7%) but visit to female sex workers and extramarital partners were found high. Peer pressure, low perceived risk of contracting disease, and less access to condom were some of the factors which hindered condom use. Availability of economically feasible service of female sex workers was another factor associated with high prevalence of the disease. Limited health system capacity is a cross cutting issue which has contributed in outnumbering this group from the main stream focus of HIV prevention effort. Unsafe sexual behaviour was the major determinant of HIV among migrants of Nepal. This review concludes that efforts of HIV prevention should be directed to migrants of rural areas to reduce the risk of spread of the disease.

INTRODUCTION

Migration is a well established phenomenon in Nepal. Migration to another country was started in Nepal as early as Rana Regime (1) Perception of Nepalese migrants has shifted from global warrior to global workers over the last few decades (2) . It is estimated that more than 2 million Nepalese have currently migrated out of country to seek their livelihood opportunities and primarily to support their families (1, 3). Among them, 89 % migrated to India as of 1991 (1). As of 2005, there was increasing trend of migration to gulf countries, other Asian countries and more developed countries but still vast majority (77.3%) goes to India (4) Almost one third of the Nepalese economy is based on remittance which shows the importance of migration (1). Economic hardship, lack of employment opportunity within country and political conflict of last one and half decade have been the major contributing factors for migration of population in context of Nepal (5, 6). Population mobility has been seen as one of the most significant contributing factors fuelling the HIV burden in South Asia (7). National Centre for AIDS and STI Control (NCASC) of Nepal has also identified migration as one of social risk factors (8), and the migrants as one of the most vulnerable group for HIV infection (1). Objective of this review paper is to explore the

factors that determine the prevalence of HIV among migrant labours of Nepal.

METHODS

Literature review was carried out to identify the determinants of HIV prevalence among migrant population of Nepal. Electronic peer reviewed journals were accessed by using science direct, Google scholar and Pubmed. The timeline was limited to January, 1990 - April, 2011. HIV, AIDS, Migrant*, Nepal*, Asia, were the key words for searching literatures using Boolean [(HIV or AIDS) AND migrant* AND (Nepal* or Asia)] search method. A total of 118 articles were found in the first stage. After reading titles and abstracts of these 118 articles, 31 were found irrelevant. The remaining 86 articles were read thoroughly by both authors. The selected articles were then put into the third stage to use for extensive literature review.

To broaden the horizon of the review, other “grey literature” (reports and official documents) were accessed on the respective website of Ministry of Health and Population (MoHP), Nepal, UNIADS , World Health Organization (WHO) and National Centre for AIDS and STI control (NCASC), Nepal. Finally, additional 17 sources were also included into this review.

Literatures were considered for inclusion if they addressed the issue of the HIV/AIDs among migrants of Nepal discussing; (i) prevalence, or (ii) factors related to HIV acquisition among migrants of Nepal. The papers which were just talking about migration and causes of migration and not specifically analysing the HIV related issues were excluded.

RESULTS

CONTEXT OF STUDY GROUP

A study conducted by Family Health International (FHI) in 2002 found that migrants in Nepal are primarily young and economically active group, and they are migrated for livelihood purpose (9). Most of them migrate seasonally for about six month to India or for many years to other countries (10). It is continuously reported that over half of the migrants (51%) were highly productive and belonged to sexually active age (18-25) groups (9). In Nepalese society, migration of young people is also viewed as an opportunity to see the world (4). Majority of data and studies in context of Nepalese migrants are confined to migrants to India as three quarter of migration occurs to India (4). Migration of female labours was not the focus of any study carried out in HIV related context. Hence, findings of this review are exclusively related to male migrants.

HIV PREVALENCE AMONG MIGRANTS

HIV prevalence in Nepal has been monitored in an irregular, intermittent and ad-hoc basis for all high risk groups including migrants (6). Again, not all migrants of gulf and developed countries are included in these studies which retrieved in this review. In 2001-2003, it was found that the disease prevalence was 8.5% among migrants to India and 2.3% among the migrants within Nepal (11). In 2006, the prevalence was 2.4 % (9). Further estimates according to a survey done in Nepal in 2008 showed that the prevalence in two different regions are now lower than the findings of 2001-2003 (western region : 1.1% and far western region 0.8%) (8). Though the yearly trend has shown a decline in prevalence status, this study included samples from only two out of five regions of Nepal. As the samples were not included from all five regions of Nepal and each region is geographically and socially different, the findings of 2008 in those two regions may not be generalisable to whole country . Therefore it may be too early to conclude that prevalence is decreasing. Likewise, current prevalence is still high enough to declare an epidemic situation among this risk group (0.8% to 1.1 %) (8) . A report from Ministry of Health and Population shows that migrant population constitute 40% of

the total people living with HIV showing high level of absolute burden of disease among the group (12). A report of 2010 of Ministry of Health and Population states that this prevalence reached to 3% among wives of migrants showing a clear chain of link of HIV among migrants and their spouses (12, 13). This kind of infection has been reported by studies in Nepal and India too (14, 15).

DETERMINANTS OF HIV AMONG MIGRANTS

HIV is now widely accepted as a social disease. Factors leading to acquisition of HIV infection entangles the complex social, economical and environmental context. For review purpose of this article, behavioural, social, environmental and health system related factors are the major areas of study.

BEHAVIOURAL FACTORS

Behavioural factors were identified as the most important determinant of this disease. Unsafe sexual practice is the commonest mode of transmission of HIV among the migrants (16). Premarital and extramarital sex is culturally forbidden in Nepalese society but, studies have shown increasing trend of premarital and extramarital sexual behaviours (6, 16). There is close link between migration and having multiple sex partners (15). Unsafe sexual practices with multiple sex partners increases the risk of HIV transmission among the migrants (1). One qualitative study quotes, "May be no migrant return home without having sex in Mumbai" (major city in India where majority of Nepali migrants work) (1). It further states that visiting brothel is a common practice among Nepalese migrants. Another study shows that nearly 60% (2001) (11), 27 % (2004)(6) , and 41.6% (2008) (17) of the migrants in India have visited female sex workers. In brothel, they are often posed to the risk of contracting HIV as practice of condom use is low (18). As of 2010, condom use among migrants is still low (17.7 %) (17). The common beliefs that condom reduces the sexual pleasure is one of the major reported factor which is causing less use of condom (1, 16, 19). Again, the migrants perceived that they and their partners were not at risk of contracting HIV. The perception had caused low condom use among migrants (1).This type of perception among migrants is continuously reported in other studies as well (16, 19).These migrants, when return to Nepal they often have unprotected sexual contacts with their wives or other partners in Nepal acting as bridge for the disease from high prevalence to low prevalence area. Unsafe sexual practices were often reported to increase due to alcohol consumption as it complicates the HIV transmission by increasing unsafe

sexual contacts, impairing judgement and involving risk taking behaviours among migrants (1).

SOCIAL FACTORS

Educational status especially health literacy is an important determinant of the disease transmission and prevention. Even though >90% migrants (India) have heard about HIV, study reports that complete information still lacks in this group (18). It is often claimed that 64.7 % of Nepali migrants have access to HIV related information (11) but as of 2006, only 27.6% of females and 43.67% of males can correctly identify the ways of transmission of HIV (6, 20). The most recent Nepal demographic and health survey, 2006 (20) found that only 77% of male knew the fact that HIV can be prevented by using condom. This fact can be better understood if it is acknowledged that vast majority (89.9%) of the migrants (to India) have studied less than grade 10 and one fifth were illiterate (17). This poor educational status further complicates the efforts to reach this group by information through print media. It is seen that HIV related information has been focused around urban areas which hardly covers 20 % (6) and contrastingly the major toll of migrants is from the rural areas which are far flung and hard to reach by current urban centered approach (1, 21). Re-iterating the fact, Nepal Demographic and Health Survey (NDHS) key finding (20) stated that HIV prevention knowledge is much higher in urban areas than in rural areas. Hence there is now question on the quality, coverage and completeness of the information coverage on HIV in Nepal.

Peer pressure is one important determinant which may put this group into risk of the disease as half of the migrants are of age group 18-25 years (9). Peer pressure was found to be a highly influential factor which lead the young migrants to brothel of India (1). The same study also found that peer pressure was some time so intense that not -going to brothel was often linked with the lack of sexual potency; and hence, brothel visit often presented as macho image. This pressure caused young men to indulge into sexual activity with the FSWs of brothel (1). In addition to peer pressure, majority of the migrants were often single at their work place and felt lonely as being away from home, family and own society (7). Sense of loneliness made them to search the options for relieving stress and searching company. This led them to either mix with the peers or with FSWs as one of the easy escape from loneliness (1, 7). In both ways, they mostly end up having sex with female sex workers.

When migrants leave their home and family, they feel that

no one can notice them, and hence they are now free (9). It also gives them freedom from their long standing cultural norms of forbidden extra marital and pre marital sex (7). They perceive that they are now in easy position to do whatever they want in terms of sexual acts. Hence, it compels them to visit other sexual partners and sex workers more often and easily than at home (9).

Talking about sex is still a taboo in Nepal. If anyone talks about sex, then s/he will be regarded as impolite and a cause of social disharmony (6). Because of this taboo, there is lack of communication among family member about sexuality. This taboo also hinders communication among spouse related to sexual health and safety (7). Furthermore, this taboo also causes less sharing of information on sexual health and safety among family members which further creates difficulties in reaching all members of the family with HIV related information. When migrants return from work places, they often do not communicate about STI and HIV with their spouse/partner; if they are infected, there is high chance of transmitting infection to their partners at Nepal (1, 7)

In a broad context of migration, HIV is a cumulative outcome of poverty, lack of opportunity and hardship at one's place. Sex trade in Indian cities is in reach of migrants. As migrants are earning, they often have cash in their pockets which makes it easier for them to visit brothel. As reported in 2004, as cheap as 10 Indian Rupees up to 1000 Rupees (#One USD= 48 Indian Currency) was the rate that migrants had paid to sex workers (1). This amount is cheaper even for the migrants who earn less. Again, it was also reported that regular clients of FSW would get discount on these rates (1) which promotes the migrants to be the regular client of sex workers. When these migrants return home, for instance they have cash and goods with them, hence, they can also get offer from local sex partners, which ultimately increases the risk of HIV transmission to their community (1, 22).

ENVIRONMENTAL FACTORS

There are a number of environmental factors that are fuelling HIV transmission among migrant groups. Availability of sex workers and feasibility of buying sex is one of the major environments that indulge migrants into sexual practices (1, 23). Mumbai is the major destination city of Nepali migrants. Mumbai including other major Indian cities (Panjab, Delhi, and Chennai) have a number of brothels which has made easy availability of the sex (1, 14). Again,

these brothels have a range of rates (as discussed earlier in this paper), the services are at reach of the migrants based on amount of money they have. During this period of obtaining service from female sex worker, access of condom is limited or often not at all. A study in 2006 showed that less access to condom is a major barrier to consistent condom use (18). This study reported that 60% of migrants reported lack of access as the main cause of not using condom. A number of factors can be linked to this low status of use and access to condom to this migrant group. It may be that there is language barrier in obtaining condom, the migrants do not know the available outlet of condom, and most importantly, stigma associated in the South Asia region related to sex related behaviour often impedes the easy purchase of condom by migrants (6, 18). Migrants usually have to face discriminatory laws in terms of facilities and protection system of the host Governments. This discrimination occurs in terms of economic, physical or cultural form of barriers. It is reported that they have to pay higher for any health care they want to receive (7) which reduces the likelihood of treatment of STI in the early stage. Since, migrants are new and often are unfamiliar with the available services, they may find difficulties in accessing the health care facilities (1, 15). The other factors may be that they are from different language background; the information and communication materials disseminated at the host country may not be easy for them to understand (7).

HEALTH SYSTEM CAPACITY

Condition within national and international environments are not often facilitating for migrants regarding health and safety issue. The HIV prevention program within Nepal is more focussed on the urban areas (20% of the country) where as the most of migrants are from the rest of the 80% rural areas (6). Likewise, access to information regarding HIV prevention is very limited in the rural and remote areas due to geographically scattered distribution of migrants, posing challenge on reaching the migrant group (4). It is seen that existing program for HIV prevention regarding migrants is mainly focussed on the areas like preventive education in the home community, and proper management of sexually transmitting diseases are directed to the people who are within the country (12). This programming approach of Ministry of Health outnumbers the large number of Nepalese migrants who are out of country (6). As Nepal's current HIV control and prevention program under NCASC is still in short of funding and predominantly run by international aid (97%), solution to reach the migrants is not easy in near future as well (6, 13). Due to inadequate funding, there has

been a battle between preventive and treatment side of HIV rather programming in complementary activities (6). It is often stated in guiding documents that migration policy regarding HIV need a coherence but no coherent international and national migration policy has been in system (4). Pre-departure briefing is done specifically to those who are going to gulf countries, but the briefing is not effective and often not monitored for its effectiveness till date (2). This briefing is often not feasible to those migrants who directly enter India through borders of Nepal and India without any restriction. Official record of migrants who are in India is still not available with Government of Nepal which further complicates the regulation of migration process, hence, preventing of HIV among migrants (1).

HIV is one of the twenty high priority areas of Ministry of Health and Population (12). High level officials, sometimes even ministers are engaged in the steering committee and coordinating bodies related to HIV and AIDS, but achievements to prevent HIV specially among male migrants and their wives are still less (13). Even though Ministry of Health and Population had envisioned to provide care and support service to all affected by HIV and to establish effective and efficient management system by 2006 (24), the progress is not achieved as expected. Since basic social services and health services are poorly functioning, it is hardly possible to prevent disease transmission of HIV by 2015 i.e. reaching Millennium Development Goal 6 (6). Ministry of Health and Population is unable to establish voluntary counselling and testing services throughout the country (21). A study revealed that 90% of HIV positive (diagnosed during survey) said that they were unaware of their HIV positive status (6). This finding reflects poor screening and surveillance capacity and coverage of current health system. The laboratories are often ill resourced, lab technicians are often not provided enough training, and in most regions (especially in rural areas) the services are unavailable for voluntary counselling and testing for HIV (12, 13). There is lack of professionalism (confidentiality and empathy) among trained health workers which further causes stigmatisation among high risks and the person infected with HIV (25). Often HIV patients complain about lack of trust with these health workers and lack of confidentiality in health institutions (6) which in turn decreases trust over the national health system, hence, making disease surveillance system more complicated than that actually is.

Highly varied topography is another great challenge in order

to deliver health services in Nepal (6). It further complicates to establish social services and infrastructure, and deliver public health intervention to reach the migrant population (21).

DISCUSSION

HIV among migrants is influenced by a number of behavioural, social and environmental factors. Unprotected sexual behaviour of the migrants is the major area that is in need of focus (6, 16, 17). Low perceived risk of themselves and their partners of contracting HIV among migrants is playing a major role in low condom use (1, 6). In one of the study among young age group (14-19 years) in Nepal, it was reported that this age group found themselves at risk of contracting HIV (26). This can be applied as potential positive factor that the migrants are of young age group and can be positive receivers of health messages and condom promotion. Though there is an apparent decline of prevalence of HIV among migrants in 2001 to 2008, studies reporting such decline had not clearly justified why these changes have occurred (17). The claim that 64.7% of the migrants have access to HIV related information does not fit with the fact that only 43.7% knew the mode of transmission of HIV (6, 20). This fact may indicate need of more strong evidence to explain the behaviour and current change in trend. This review found that there is need of a multi disciplinary approach instead of current patchy, weak and often very low level of activities at grass root level (6). There is limited data about the sexual behaviours of the migrant labours, therefore, there is need to utilize the existing knowledge on programming rather than just focussing on counting how many people have heard the word HIV (20).

In HIV prevention efforts among the migrant population, there is need to consider three major factors ; (i) This group might already start sexual contact in their place of origin, (ii) they might start sexual activity in host country where they migrate (iii) they might continue their unsafe sexual contact with their wives or partners after returning home (15). To state such dimension of potential unsafe sexual contact, prevention strategies in place of origin (home community) and destination country is essential. Program in destination country may be the replication of the success stories of Thailand where 100% condom promotion and “No Condom No Sex” campaigns have been successful in reducing HIV significantly (6). Promotion of this kind of safe sexual behaviour is the most needed action in current Nepalese context as majority of cases are from sexual mode of

transmission. However, the approach needs to adapt in context of Nepalese migrants as this group is not still fully in reach of Government’s activities and is different target groups than in Thailand. Need of similar kind of condom promotion is further justified by a recent epidemiology modelling of 2011 which has shown that if condom use is increased from 39% to 80%, the prevalence among migrants of far western Nepal can be reduced to 1.1% from 2.2% contributing to reduce prevalence in general population below 0.4% (14). There was one successful effort in the prevention of HIV by reaching migrants through letters in Far western Nepal (27). In this effort local partners sent letters to the migrants to inform them about HIV risk, transmission and safe sexual behaviour by using diffusion of innovation model (27). This approach is equally applicable to other parts of country as well. But this approach should be built in with ongoing research so that the findings could show the strength of effects on reducing risk behaviour and ultimately contributing HIV reduction in this group. For the migrants who start unsafe practice at home before migration or who continue unsafe sex practice after returning home, there is need of more efforts to increase awareness and , to increase availability of condom from health facilities and health volunteers (6). Formally there is a system of providing condom free of cost at health facility and through health volunteers of Nepal, but due to taboos related to sex and sexual matters, condom use is low (12). The other fact is that health volunteers of Nepal are females, and male migrants from the same community may not feel comfortable asking for condom due to sex related taboos. Another contributing factor for low condom use and availability is opening hours of health facilities. Health facilities in Nepal open from 10.00AM to 2.00 PM only (12). After and before such opening hours there is less chance of getting condoms in rural areas. An alternative approach of keeping condom boxes outside the health facilities and near health volunteer’s house may be a good approach to overcome low condom use due to stigma and opening hours.

It was also found during this review that only a few studies have been conducted in Nepal related to migrant labours. However the national focal point; NCASC does not have system of disseminating appropriate information through its website except for some of the recent guidelines (28). Along with knowledge management, there is need of very concentrated efforts in strengthening health system for surveillance, treatment of STI and promoting counselling and testing, ensuring confidentiality within health

professionals and efforts to reach rural areas rather than concentrating only in urban areas (6, 27, 29). Capacity building of the district level facilities for HIV prevention is another area that need to be focused (12). Besides these, almost all studies conducted in Nepalese context has seen the migrant labours merely as labour force but not as a human having sexual need and sexual identity. This view may also affect current approach of programs of HIV and AIDS control in Nepal. Most importantly, information on female labour migrants, and the migrants who are going to other countries are not available in surveillance data. As there is system of pre-departure health check for those countries, it is feasible option to establish information bank by linking such data focusing on other migrants as well (10). This will ultimately strengthen the surveillance capacity of health system too.

CONCLUSION

Migration for livelihood is an important part of Nepalese economy. HIV prevalence has been found declining (8.5% in 2001 to 1.1 % in 2008) (6, 11, 17) in migrants of Nepal but the phenomenon is not justified with strong evidences. Unsafe sexual practice was found to be the major determinants in HIV transmission. This risk behaviour was predisposed by a variety of social factors like isolation, loneliness, peer pressure and alcohol consumption culture. Availability of affordable services of female sex workers in Indian cities was also associated with migrant's risky sexual behaviour. Health system capacity of Nepal is still not sufficient to focus on migrant population. Therefore, there is a need of multidisciplinary socio behavioural intervention to prevent HIV among this group.

References

1. Poudel KC, Jimba M, Okumura J, Joshi AB, Wakai S. Migrants' risky sexual behaviours in India and at home in far western Nepal. *Trop Med Int Health*. 2004 Aug;9(8):897-903.
2. Joshi S, Simkhada P, Prescott G. Health problems of Nepalese migrants working in three Gulf countries. *BMC International Health and Human Rights*. 2011;11(1):3.
3. The World Bank. HIV/AIDS in Nepal. 2008 [cited 2011 9 May]; Available from: <http://siteresources.worldbank.org/INTSAREGTOPHIVAIDS/Resources/496350-1217345766462/HIV-AIDS-brief-Aug08-NP.pdf>.
4. Thieme S, Bhattra R, Gurung G, Kollmair M. Addressing the Needs of Nepalese Migrant Workers in Nepal and in Delhi, India: Mountain Research and Development 2005 2005.
5. Suvedi BK. Transition of HIV epidemic in Nepal. *Kathmandu Univ Med J (KUMJ)*. 2006 Jan-Mar;4(1):115-8.
6. Wasti SP, Simkhada P, Randall J, Teijlingen EV. Issues and Challenges of HIV/AIDS Prevention and Treatment Programme in Nepal. *Global Journal of Health Science*. 2009;1(2):62-72.
7. Simonet D. The AIDS Epidemic and Migrants in South Asia and South-East Asia. *International Migration*. 2004;42(5):35-67.
8. National Centre for AIDS and STI Control [Nepal]. National Estimates of HIV Infections: 2009 Nepal. Kathmandu [Nepal]: National Centre for AIDS and STI Control [Nepal]2010.
9. Family Health International. HIV/STD Prevalence and Risk Factors among Migrant and Non-Migrant Males of Achham District in Far-Western Nepal. Kathmandu: New Era, STD/AIDS Counseling and Training Service2002.
10. Nepal B. Population mobility and spread of HIV across the Indo-Nepal border. *J Health Popul Nutr*. 2007 Sep;25(3):267-77.
11. Gurubacharya DL, Gurubacharya VL. HIV prevalence among Nepalese migrant workers working in Nepal and Indian cities. *Journal of Nepal Medical Association*. 2004;43:178-81.
12. Ministry of Health and Population. Annual Report. Kathmandu, Department of Health Services;2008/2009 2008/2009.
13. Ministry of Health and Population. UNGASS Country Progress Report Nepal 2010. Kathmandu [Nepal]: MoHP2010.
14. Vaidya NK, Wu J. HIV epidemic in Far-Western Nepal: effect of seasonal labor migration to India. *BMC Public Health*. 2011;11:310.
15. Saggurti N, Nair S, Malviya A, Decker MR, Silverman JG, Raj A. Male Migration/Mobility and HIV Among Married Couples: Cross-Sectional Analysis of Nationally Representative Data from India. *AIDS Behav*. 2011 Aug 3.
16. Puri M, Cleland J. Sexual behavior and perceived risk of HIV/AIDS among young migrant factory workers in Nepal. *J Adolesc Health*. 2006 Mar;38(3):237-46.
17. Save the Children/Nepal. Integrated Biological and Behavioral Surveillance Survey Among Male Labour Migrants. Kathmandu [Nepal]2010.
18. Family Health International, United States Agency for International Development. Integrated Bio-Behavioral Survey among Male Labor Migrants in 11 Districts in Western, Mid and Far Western Regions of Nepal. Kathmandu: New ERA, STD/AIDS Counseling and Training Services2006.
19. Regmi K. Opportunities and challenges of sexual health services among young people: a study in Nepal. *J Sex Med*. 2009 Feb;6(2):352-61.
20. Ministry of Health and Population [Nepal], New ERA [Nepal], Macro International Inc. Nepal Demographic and Health Survey 2006: Key Findings. Kathmandu, Nepal, and Calverton, Maryland, USA: Ministry of Health and Population, New ERA and Macro International Inc.2007.
21. Jha CK, Madison J. Disparity in health care: HIV, stigma, and marginalization in Nepal. *J Int AIDS Soc*. 2009;12(1):16.
22. UNAIDS, IOM, ILO. HIV and International Labour Migration. 2011; Available from: http://www.unaids.org/en/media/unaids/contentassets/dataaimport/pub/manual/2008/jc1513a_policybrief_en.pdf.
23. Rodrigo C, Rajapakse S. Current Status of HIV/AIDS in South Asia. *J Glob Infect Dis*. 2009 Jul;1(2):93-101.
24. Karkee R, Shrestha DB. HIV and conflict in Nepal: relation and strategy for response. *Kathmandu Univ Med J (KUMJ)*. 2006 Jul-Sep;4(3):363-7.
25. Ghimire L, Smith WC, van Teijlingen ER. Utilisation of sexual health services by female sex workers in Nepal. *BMC Health Serv Res*. 2011;11:79.
26. Iriyama S, Nakahara S, Jimba M, Ichikawa M, Wakai S.

AIDS health beliefs and intention for sexual abstinence among male adolescent students in Kathmandu, Nepal: a test of perceived severity and susceptibility. *Public Health*. 2007 Jan;121(1):64-72.

27. Poudel KC, Jimba M, Poudel-Tandukar K, Wakai S. Reaching hard-to-reach migrants by letters: an HIV/AIDS awareness programme in Nepal. *Health Place*. 2007 Mar;13(1):173-8.

28. NCASC. Publication. Kathmandu [Nepal]: Ministry of Health, National Centre for AIDS and STI Control; 2011 [cited 2011 May 23]; Available from:

<http://www.ncasc.gov.np/publicationtree.php?type=publication>.

29. Furber AS, Newell JN, Lubben MM. A systematic review of current knowledge of HIV epidemiology and of sexual behaviour in Nepal. *Trop Med Int Health*. 2002 Feb;7(2):140-8.

30. Roy T, Anderson C, Evans C, Rahman MS. Sexual risk behaviour of rural-to-urban migrant taxi drivers in Dhaka, Bangladesh: a cross-sectional behavioural survey. *Public Health*. 2010 Nov;124(11):648-58.

Author Information

V Khanal, MPH

School of Public Health, Curtin University

R Karkee, BP

Assistant Professor, Koirala Institute of Health Sciences