Does Migrant Elevate the Risk of HIV/AIDS? A Sequential Analysis of Linkages between Migration and HIV/AIDS in Darjeeling, India

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Importance of the Problem

Migration has always been a characteristic of human society and one that has probably always been carried with continuous developing health challenges. As population movement becomes more complex, concerns have been voiced about potential links between migration, health and well being in general, and about the possibility of transmission of infectious diseases in particular. A substantial proportion of migrants may have elevated risk behaviour due to their separation from family and interaction with new environment having liberalized sexual norms and environment. As a result, they not only acquire the virus themselves but are also likely to transmit it to their spouses (Singh & Gupta 2002). However, in the current era of HIV/AIDS, it has also been recognized as a serious challenge bridging the low and high HIV risk population. In fact, the problem of HIV/AIDS has deep social and economic roots and hence its impact reaches far beyond the health sector with severe socio-economic consequences. Therefore, a comprehensive understanding of various pathways linking migration and HIV/AIDS is critical for devising suitable programmatic response to curb the pace of epidemic and also for changing its recourse.

Using data from the Kenya Demographic and Health Survey (1993) Brockerhoff et al. (1999), found that migration was a critical factor in high risk sexual behaviour and its importance varies by gender and by the direction of movement. Saggurti et al. (2008) have studied another group of labour migrants and concluded that contracted labourers were significantly more likely to report alcohol use and HIV risk behaviour than non-contracted labourers. Further they have added that the contracted labour who sex with a non- spousal unpaid female partner had reported that the sexual partner was a workmate. Gupta et al. 2010 have also concluded that alcohol consumption among mobile men, especially those who consumed alcohol daily had higher sexual risk behaviour and STI infection.

Theoretical Premises

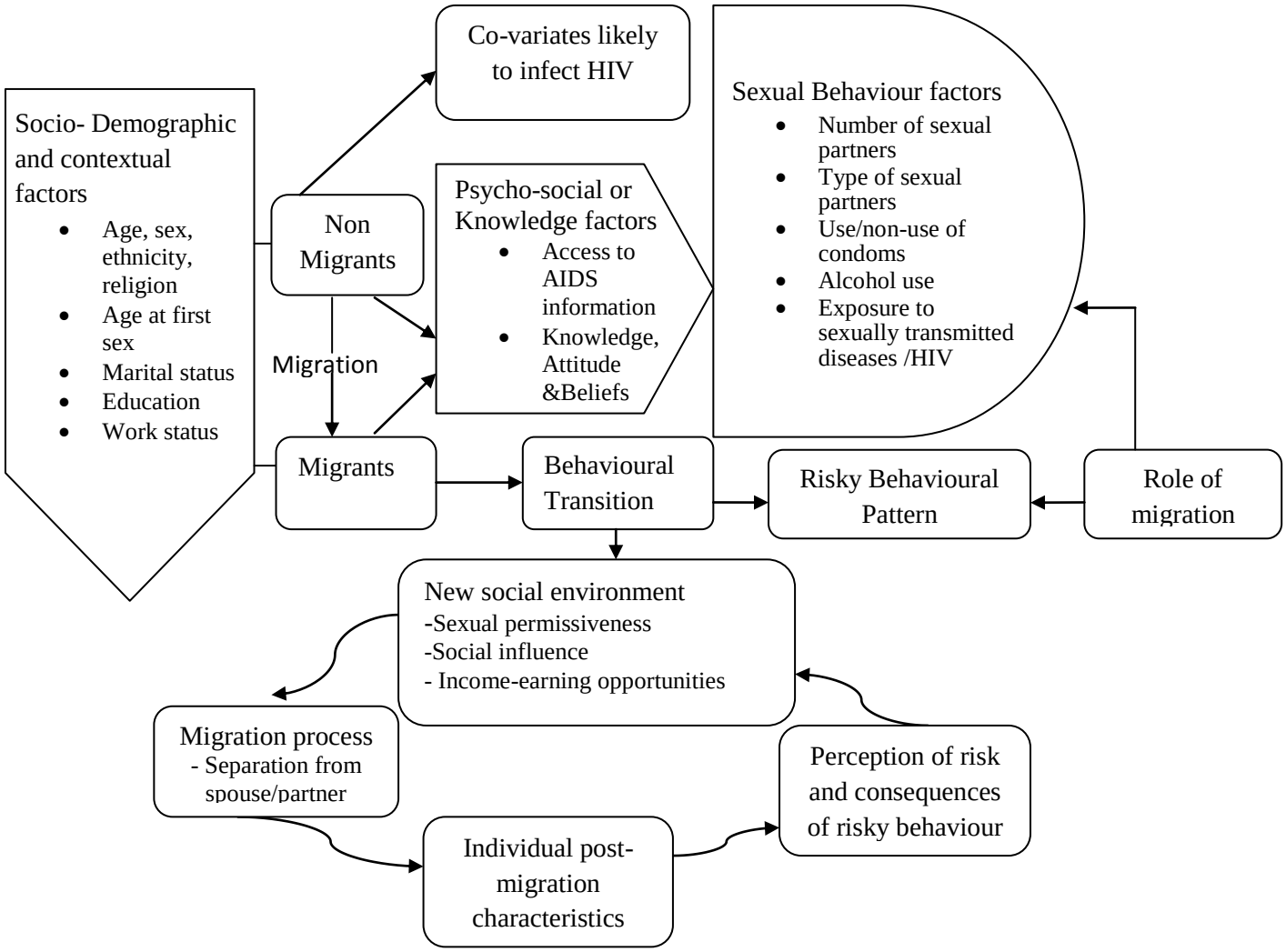
Health Belief Model and AIDS Risk Reduction Model also provide the theoretical orientation for this research. *Health Belief Model:* The Health Belief Model was proposed by Rosenstock (1966) and later revised by Becker and Maiman (1975). The model assumes that an individual behaviour is guided by expectation of the consequences of adopting new practices. Another model that can be useful in explaining the behavioural change affecting risk of HIV/AIDs is the *AIDS Risk Reduction Model (ARRM).* The AIDS Risk Reduction Model was proposed by Catania et al. (1990). The model provides framework for explaining and predicting behaviour change efforts of individuals specifically in relations to the STIs and HIV/ AIDS. The AIDS Reduction Model is useful in explaining HIV/AIDS, because it can explain how people adopt or change HIV related risk behaviour.

Research Questions, Objectives and Hypotheses

Is migration a risk factor for HIV spread? Examining the specific context this study addresses two aspects of the link between migration and HIV/AIDS, i.e., (1) how does mobility and migration heightens the HIV related risk behaviour? (2) What are different pathways through which migrants and non-migrants are likely to be infected with HIV/AIDS? Therefore, a comprehensive understanding of various pathways linking migration and HIV/AIDS and the socio-demographic and contextual determinants of HIV sero-positivity is critical for devising suitable programmatic response

to curb the pace of epidemic and also for changing its recourse as well as to unearth the behavioural transition among migrants, focusing at the HIV related risk behaviour, before and after migration. The following hypotheses have been formulated for the study based on the objectives, that single male labour migrants working in informal sectors are more vulnerable to STI/HIV and Migrants are more likely to be engaged in STI/HIV related risk behaviour due to social influence.

Conceptual Framework



Data and Methods

Use of case-control design, primary data of 700 samples has been collected from Darjeeling, India and the situation of Darjeeling attain special importance in the context of being a tourist center and also being an important international corridor having higher influx of migrants from bordering countries of Bangladesh, Nepal and Bhutan. To execute the study objectives, appropriate bivariate and multivariate techniques (Ordinary Least Square, Logistic regression, and Multinomial) have been carried out to evaluate the relationship between different variables. Chi-square test has been applied to show the association between the variables under the study.

Composite risky sexual behaviour index with 8 item dichotomous measure is more accurate measure than any single dichotomous measure to quantify the risky sexual behavior of the respondents (Williams et al. 2001). The eight risky sexual behaviour measures are basically dichotomous, indicating whether the respondent had casual sex, unprotected casual sex, commercial sex, more than one casual sexual partner, more than one casual sexual act, any episode of drinking while having sex, any episode of taking drugs while having sex, and known IDU (injection drug use) sexual partner in the 30 days prior to the survey. The scores of these eight dichotomous risky sexual behaviours will be first combined to form a composite risky sexual behaviour index, by summing non missing responses across the eight dichotomous (0 and 1) sexual behaviours with equal weight. The higher the behaviour index more will be the risky sexual behaviour of a respondent.

Social influences of risky sexual behaviour will be measured by two dichotomous variables. The first indicates the influence of family and is coded 1 if respondents self-reported knowing any of their parents, siblings, and close relatives having multiple sexual partners, homosexual behaviour, or exchanged sex for money or drugs, and 0 otherwise. The second indicates the influence of peers and is coded 1 if respondents self-reported knowing any close friends or peers having any of the three risky sexual behaviours and 0 if none. Having family members or friends with any risky sexual behaviour is expected to increase respondent's own risky sexual behaviour.

The *difference-in-differences method* has been used where outcomes have been observed for two groups. One of the two groups of respondents is HIV positive and the second group is HIV negative, and the differences are seen across migratory status of the respondents (migrants and non-migrants). In the analysis, the average gain in the second (control) group is subtracted from the average gain in the first (treatment) group. This removes biases in second period comparisons between the treatment and control group that could be the result from permanent differences between those groups.

Difference in difference = (difference between migrant + HIV and migrant + non HIV) - (difference between non-migrant + HIV and non-migrant + non HIV)

The treatment group in our set up is those who are *migrants and HIV positive* and the control group is the rest of the three groups, namely;

- *HIV negative and migrant,*
- *HIV negative and non-migrant and*
- *HIV positive and non-migrant.*

The main aim is to see the effect of migration and being HIV positive on access to health services and other dimensions of health services. In the regression framework we include dummies for migration and HIV status and interpret the coefficient term on the interaction term between the two variables as the difference in difference estimate.

Results and Discussions

Results depicted that migrants are more likely than non-migrants to have risky sexual behaviour and migration is one of the structural factors associated with HIV infections. More than half of migrants are engaging themselves in high risky sexual behaviour as compared to their counterparts. Seventy-five percent of migrants reported, ever visited to CSWs place at their life time. Similarly, almost two thirds of migrants have unprotected casual sex in last 30 days prior to survey. Only 37 percent of migrants have higher positive attitude towards condom use as compared to the non-migrant counterparts (63 percent).

Respondents of age less than 30 years, engaged in transportation related work, *episode of drinking alcohol before sex, having experience of risky sexual behaviour by family members and friends, taking drugs before sex, involved in commercial sex in last 30 days* are significantly affecting the involvement in risky behaviour. From the analysis it is evident that among the unmarried migrants, young men have higher risky sexual behaviour than their older counterparts. As well as those who have never consumed alcohol, are less likely to indulge in risk behaviour as compared to usual and occasional drinker.

Literature supports that *social influence* is another important predictor to describe the involvement in risky sexual behaviour. Results depicted that the social influences of friend and family members have positive influence among the respondent to coddle into risky behaviour which leads to STI/HIV.

Peer group effect, availability of disposable income and easy availability of sex avenues, lower socio-economic status and limited power in the new society, all these factors affect risky sexual behaviour and transmission of HIV. The odds ratio clearly indicates that a significant increase in the number of male migrants adopting HIV high risk behaviours after migration, under the influence of drugs or alcohol and less condom use. More than three-fourth of migrants consumed alcohol before their last sexual act whereas in case of non migrants it is less than one-fourth.

Therefore, people must be encouraged to practice safe sex through education and the distribution of condoms. These interventions must be combined with care initiatives, with the prevention and treatment of STI and HIV. Community outreach programmes among migrants communities and work place interventions can be instrumental in reducing the vulnerability of migrant workers to HIV.

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