A Comparative Study of HIV Risk Behaviour Between Adult Male Temporary Migrants and Non-Migrants in the Ganjam District of Orissa

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Dissertation submitted in partial fulfillment of the requirement for the award of the degree of Master of Public Health.

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October 2007

Declaration

I hereby declare that the work embodied in this dissertation entitled "A Comparative Study of HIV Risk Behaviour between Adult Male Temporary Migrants and Non-Migrants in the Ganjam District of Orissa" is the result of original research and has not been submitted for any degree in any other University or Institution.

Pratap Kumar Jena

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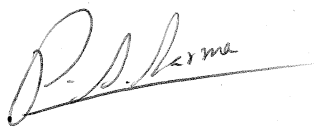
Certificate

I hereby certify that the work embodied in this dissertation entitled "A Comparative Study of HIV Risk Behaviour between Adult Male Temporary Migrants and Non-Migrants in the Ganjam District of Orissa" is a bonafide record of original research work undertaken by Dr Pratap Kumar Jena, in partial fulfillment of the requirement for the award of the "Master of Public Health" degree under my guidance and supervision.



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Abbreviations

AIDS	: Acquired Immuno-Deficiency Syndrome
ANC	: Ante-Natal Clinic
ART	: Anti Retroviral Treatment
BSS	: Behavioural Sentinel Survey
CD Block	: Community Development Block
CDC	: Centre for Disease Control, USA
CSP	: Commercial Sex Partner
CSW	: Commercial Sex Worker (Female)
DFID	: Department for International Development
HIV	: Human Immuno-deficiency Virus
IDU	: Injectible Drug Use(r)
IOM	: International Organisation for Migration
ILO	: International Labour Organisation
ICMR	: Indian Council for Medical Research
MSM	: Male having Sex with Male
MDG	: Millennium Development Goal
NAC	: Notified Area Council
NACO	: National AIDS Control Organisation
NFHS-III	: Third National Family Health Survey
NIH	: National Institute of Health, USA
NR and NC	: Non Regular and Non Commercial
OBC	: Other Backward Caste
PTCT	: Parent to Child Transmission
SC	: Scheduled Caste
ST	: Scheduled Tribe
STD	: Sexually Transmitted Disease
STI	: Sexually Transmitted Infection
UNAIDS	: Joint United Nations Programme on HIV/AIDS
UNDP	: United National Development Programme
UNICEF	: United Nations Children's Fund
UNESCO	: United Nations Educational, Scientific and Cultural Organization
UNODC	: United Nations Office on Drugs and Crime
WHO	: World Health organization

A Comparative Study of HIV Risk Behaviour between Adult Male Migrants and Non-Migrants of Ganjam District of Orissa

ABSTRACT

Background:

Studies suggest that temporary internal migration is one of the major independent risk factor for HIV transmission in rural India. Ganjam district of Orissa with 85 percent adult male temporary migration rate has more than two percent HIV prevalence. While the role of migration in HIV transmission has been questioned by researchers, ICMR report revealed that male migrant workers constitute 93 percent of HIV infected STD clinic attendants at MKCG Medical College, Ganjam. This study was undertaken to assess and compare the high-risk behaviour between adult male temporary migrants and non-migrants of the Ganjam district of Orissa.

Methods:

Using a pre-tested, semi-structured interview schedule, self reported sexual behavioural data were collected from 200 male temporary migrants and an equal number of non migrants of 15 to 49 years age, from 32 villages and 8 wards spread all over the district. The HIV risk behaviour over the past one-year of the study population was statistically analysed by logistic regression models.

Results:

Prevalence of high HIV risk behaviour was 20.1 percent (migrant 25.6%, non migrant 14.4%, p=. 005). The difference in high HIV risk behaviour between temporary migrant and non-migrant turned statistically insignificant during stepwise forward multiple logistic regression. However a second model based on number of ever migrations, suggested that those ever migrated once had shown 2.6 times (95% CI: 1.2-5.4) high HIV

risk behaviour than never migrant. People with multiple regular partners had 5.7 higher odds of high-risk behaviour (95% CI: 1.9-17.1) than those didn't have multiple regular partner. People within 20 to 24 years age group had shown 8.8 fold (95%CI: 1.5-51) high risk behaviour compared to 15 to 19 years age group. OBC category had shown 2.4 fold (95%CI: 1.3-4.6) high-risk behaviour than forward castes. Daily labourer had shown 2.8 fold (95% CI: 1.2-6.7) high-risk behaviour compared to other occupational categories.

Conclusion:

The HIV risk behaviour is highly contextual. Temporary migration status as such is not found to have an independent association with HIV high-risk behaviour. However, difference in occupation, age, caste, multiple regular partners and number of migrations have significant bearing on high-risk behaviour.

Keywords:

HIV, Risk Behaviour, Migrant, Orissa, India

Chapter I

INTRODUCTION

1.1 Back Ground

Relentless spread of HIV since its origin from primates in Africa made it an ever burning public health issue.[1,2] The end of third decade of Acquired Immuno Deficiency Syndrome (AIDS) pandemic has not ended our assiduous search for a successful vaccine and a definite cure. Fifteen million AIDS-orphan children worldwide are the silent eyewitnesses of this deadly pandemic.[3] No geographic area or population group has been immune to the spread of the disease. Two decades ago, Asia seemed to be immune to AIDS. But more new HIV/AIDS cases are now being reported from Asia than from any other region.[3]

The growing transient population is a key contributing factor in the increase and diffusion of socially deviant and epidemiologically high-risk behavior world wide.[4,5] From the epidemiological point of view, the spread of infectious diseases including HIV has always been associated with the movement of people.[5] The mobile populations are more likely to indulge in risky behaviours and they have higher chance of getting STDs including HIV/AIDS.[5] Through the movement of infected persons, migration can in turn also offer a convenient vehicle to transport diseases to places where they are previously unknown.

The rapid spread of HIV/AIDS in India is a great concern. Epidemiological analysis of data and reports in India indicate two distinct characteristics of the spread of HIV infection: from groups practicing risk behaviours to the general population, and from urban to rural areas.[6,7] The predominant mode of transmission is sexual (more specifically heterosexual) transmission.[6] The recent data also suggestive of rise in rural and female share of HIV burden in India.[6] This indicates that migration and risky behaviour are major contributory factor for spread of HIV infections in India.[7,8,9]

1.2 Statement of the Problem

1.2.1. The HIV Pandemic

The current world scenario is alarming. While the toll of HIV infected people has crossed 40 million worldwide at the end of 2006, the Acquired Immuno-Deficiency Syndrome (AIDS), alone claimed nearly three million deaths in 2006.[3] While adults above 15 years constitute 95 percent of the total HIV burden, female adults have been affected more than male adults in most of the regions. Sub Saharan Africa alone is home to two third HIV infected people. South and South East Asia (one fifth) being second in the list, has witnessed 15 percent increase in new HIV infections during 2004-2006.[3] In absolute numbers for a single country, India tops the HIV burden list of the Joint United Nations Programme on HIV/AIDS (UNAIDS) 2006 report.[3,7] Despite of the top public health priority of Government, public and civil society institutions, the World Health Statistics 2006 revealed that AIDS is the world's fourth leading cause of death.[10] This is not the end of the story, we are going to witness the death of 117 million people over next 25 years because of HIV/AIDS.[11] Global HIV Prevention Working Group in June 2007, has expressed its concern about six fold increase in HIV Infection incidence in low and medium income countries during past five years.[12] At the same time the Millennium Development Goals (MDG) Report 2007 has expressed its apprehension about the possibility of failure of much awaited MDG with respect to reduction of burden of HIV/AIDS, tuberculosis, and malaria by 2015.[13] Despite of rise in Anti-Retroviral Treatment (ART) coverage over preceding years, one in five HIV infected people don't get HIV prevention care.[14]

1.2.2. HIV Epidemic in India

The first HIV infection in India was detected in 1986 in Chennai in a commercial sex worker.[15] Since then HIV infections and AIDS cases have been reported in all parts of the

country. By the end of July 2007, a total of 181,785 AIDS cases (one third female) had been reported to the National AIDS Control Organisation.[16] The gold standard of HIV burden estimation is being the community survey, the validity of Indian HIV estimation was questioned severaltimes.[17,18,19] The much debated HIV estimation of India comes to an end during last July, with the new HIV estimation by National AIDS Control Orgnisation (NACO), India, based on expanded sentinel sites and third National Family Health Survey (NFHS-III) data. The new HIV prevalence in India is 0.36 percent in contrast to old figure of 0.9 percent.[7,20] And this recent data suggests that, India is home to 2.45 million (1.75 - 3.15 million) HIV infected people. The adult prevalence rate is 0.41 percent. [20] Though the new numbers seems to be less than half of the previous estimation, it is quite high for a single country. India's highly heterogeneous epidemic is largely concentrated in Maharastra, Tamil Nadu, Karnataka, Andhra Pradesh and parts of Manipur and Nagaland. HIV prevalence in those states is four to five times higher than any other states.[9] HIV prevalence is highest in the Mumbai-Karnataka corridor, the Nagpur area of Maharashtra, the Nammakkal district of Tamil Nadu, coastal Andhra Pradesh, and parts of Manipur and Nagaland.[7,9] While annual 2005 NACO report highlights increase in rural and female share of HIV burden in India, recent NACO data suggests that, the HIV infection rate is declining in southern states among high risk groups as well as among general population.[7] Also a recent Pune study highlights decrease in risk behaviour among young recently married men and hence conributing to a decreasing risk to their wives and children.[21] Still fear remains as a very small increase in HIV prevalence rate can translate into a huge absolute numbers of HIV infected people.

Several factors put India in danger of experiencing rapid spread of HIV if effective prevention and control measures are not scaled up throughout the country. Unsafe sex and low condom use, men who have sex with men (MSM), migration and mobility, low status

of women, widespread stigma, injecting drug use (IDU) are the major risk factor for Indian HIV epidemic.[8,9] While many authors claimed low awareness particularly among women as the major reason for spread of HIV in rural India.[22,23,24] Despite of definite progress in National AIDS Control Programme, the complex heterogeneous epidemic still remains a great challenge to India.[6,22]

1.2. 3. HIV Epidemic in Orissa and Ganjam

Orissa is a low HIV prevalent state.[7] Since the highly HIV affected coastal belt of Andhra Pradesh is in continuation with its costal belt through Ganjam district, there exists a fear of HIV epidemic every time. Department for International Development (DFID) sponsored ORG-Marg 'HIV vulnerability' ranking of districts has identified ten (six southern districts including Ganjam) districts of Orissa as highly vulnerable.[25] Orissa State AIDS Cell's 2003 report is suggestive of nearly half of the HIV/AIDS burden of Orissa was in Ganjam.[26] HIV Sentinel Survey 2005 has identified Balasore, Puri, Khurda, Koraput as high HIV prevalent districts after Ganjam.[7, 25, 26]

(a) STD and HIV in Orissa

One SCB medical college study highlighted that married male labourer constitute around half of the STD cases and prostitutes as the major source (81 percent) of STD.[27] NACO 2005 report suggests that, median HIV prevalence has been increased significantly among Sexually Transmitted Disease (STD) patients in Orissa over the previous year.[7] NACO's new revised HIV estimates (2006) for Orissa indicate that there is two fold increase in HIV prevalence among ANC mothers since 2002.[16] A recent south Orissa STD clinic study suggests that HIV seropositivity among STD clinic attenders is four percent.[28] This study also highlights that male HIV seropositive people were from lower middle class and migrant group (43.3 percent were immigrants from Surat and Mumbai).

(b) ANC mothers and HIV in Orissa

Though the HIV prevalence among ANC mothers is low (less than 0.5 percent), the Ganjam district (2-2.5 percent), and other 155 (104 during 2005) Indian districts have a high HIV prevalence (above one percent).[7,16] So Ganjam is termed as 'A category' district with respect to prevalence of HIV among ANC mothers or general population.[16]

(c) IDU, MSM and HIV in Orissa

Orissa BSS 2001 has indicated IDU and MSM practice in Orissa. But NACO 2005 HSS failed to document HIV among drug users and MSMs in Orissa. Recent NACO data suggests IDU is emerging as a risk factor for HIV transmission in Punjab, Orissa, Kerala and West Bengal, besides North Eastern states.[16] HIV prevalence study among IDU in Bhubaneswar, Orissa indicates that seven percent of IDU are seropositive for HIV-1.[29] Though this study failed to document HIV-2 in Orissa, a south Orissa study during 1999 had confirmed HIV-2 in that region.[30] It seems that Orissa is going to face more HIV burden because of the dual mode of transmission HIV.

1.2.4 HIV Epidemic Transmission Pattern

The high-risk behaviour such as injecting drug use, unprotected paid sex and unprotected sex between men; and Parent to Child Transmission (PTCT) are major causes of new HIV infections.[3] Intravenous drug use was the major route (67 percent, paid sex 12 percent) of HIV transmission in Eastern Europe and Central Asia during 2005.[3] In South and South-East Asia (excluding India), half of the prevalent HIV infections was seen in sex workers and their clients in 2005 and the share of intravenous drug use was one fifth.[3] Male having Sex with Male (MSM) was the major (26 percent) cause of HIV transmission in Latin America followed by intravenous drug use (19 percent) during 2005. Despite of the presence of different effective mode of HIV transmission, the sexual transmission still

tops the world and Indian HIV transmission list.[3,7] The Indian epidemic continues to be concentrated in populations with high-risk behavior. NACO's new revised data also indicates that the prevalence of HIV among MSM (11.6 percent) is highest followed by Intravenous Drug Use (IDU)-10.6 percent and Commercial Sex Worker (CSW)-9.4 percent. More CSW and long distance drivers are HIV infected in india.[16] Heterosexual transmission of HIV constitutes 84.6 percent of all identified HIV infections. Though the IDU related an HIV infection is less, new evidence suggest that it is spreading to metropolitan cities like Delhi, Chennai, and states like Punjab, West Bengal, Kerala and Orissa apart from North Eastern states.[7,16] The 'Bridge' population drives the HIV epidemic in Sub Saharan Africa, India and other 3rd world contries.[31,32] The low rate of multiple partners concurrent sexual relationships among the wider community has a significant bearing on India's low HIV prevalence.[9,32]

1.2.5. Migration: The World Scenario

Migration is an inevitable natural evolutionary force.[33] The economic benefit and the role of adult male migrants as the 'major bridge' population, makes it a neeessary evil.[34,35] The United Nation (UN) Population Division estimated that there is ten percent rise in migrant population during 2000 and 2005.[35] International Organisation for Migration (IOM) has reported that one in 35 people in the world is a migrant.[34] Nearly half of them were females. However Asia, the traditional international migrant stock, is witnessing decrease in international migration and increase in internal migration.[35] Now more Asians are getting a job in their home country because of increased urbanization. This has caused more internal and male rural to urban migration in Asia.[36,37] Usually this type of migration is temporary in nature.[37] The national census data set gives more information regarding permanent rather temporary migration.[37,38] Majority of internal migrants across Asia

travel for seasonal agriculture work or short-term contracts in the cities, returning to their villages afterwards. It is a well-known fact that the temporary migration & commuting are routine livelihood strategies of the rural poor of developing country.[37,38]

1.2.6. Migration: The Local Context

One in three Indians are migrant by place of birth.[39] Maharastra followed by Delhi and West Bengal tops the country's migration list. Three out of four households include a migrant in some parts of India.[38] Majority of migration by the place of last residence was of long duration or permanent.[39] Only three percent of it had migration duration of less than one year. During 1991-2001, high growth (53.6 percent) of interstate migration was observed.[39] At least one in seven residents of Delhi or Mumbai are in-migrants. While marriage was the predominant reason for migration among women, the work employment was the major reason for male migration. While the inter-state migrants are mainly urban oriented, the intrastate migration is predominated by rural to rural migration because of marriage in case of females and work search in case of males.[39] The urban slum setting studies in Mumbai and Surat and other reports established that significant migrant workers from Orissa are interstate seasonal migrant Workers.[40,41] UNDP report indicates that the number of migrants from Orissa to Surat is approximately five to seven lakhs.[42] The Annual Review 2005 of LEPRA Society reveals that the temporary migration among the adult males in Ganjam is 85 percent.[43]

1.2.7. HIV and Migration: Two Crucial Social Issues

International organisations have identified AIDS and migration as two important crucial social issues of the present day.[3,34] While the interaction between them is dynamic and complex, the migrants are at higher risk of HIV infection due to structural factors

associated with migration.[44,45,46] The client profile of CSWs reveals a huge proportion belongs to migrant workers.[44,47,48] The large pool of internal migrant population as a result of economical hardships with the possibility of faster movement across the country is more important than international migration in relation to the dynamics of spread of STDs and HIV/AIDS.[40,49,50] The annual report of National Institute of Epidemiology, Chennai has cited from MKCG medical college STD clinic report that 93 percent HIV infected among the STD clinic attendants were migrant workers.[26] Similar findings was also enlisted by another study from Ganjam.[28] From this it quite evident that migrants are high risk group in Ganjam.

1.3. Review of Literature

1.3.1. Definitions

(a) HIV Risk Behaviour

UNAIDS has defined those proximate behaviours that enhances the chance of getting HIV directly as the HIV Risk Behaviour.[51,52] This emphasizes on unprotected sex (non use of condom) and needle sharing. Where as National Institute of Health (NIH) includes Sharing drug needles or syringes, having sexual contact, including oral, with an infected person without using a condom and having sexual contact with someone whose HIV status is unknown as HIV high risk behaviour.[53] For surveillance data analysis, indicators like multiple (two or more) sex partners, use of intravenous drugs, presence of untreated STD, anal sex without a condom have been in use for measuring and defining HIV risk behaviour by Centre for Disease Control (CDC), Atlanta.[54] Family Health International, has used different contextual indicators to measure HIV Risk Behaviour, as follows. A Philippines study used indictors like intercourse with (a) sex workers or strangers, (b) the foregoing partners without the use of condoms, and (c)

multiple partners as sexual risk behaviour along with IDU and MSM.[55] Even some study used proxy indicators like premarital sex as risk behaviour.[56] Behavioural Sentinel Survey (BSS) India 2001 and BSS Orissa 2001, have used non regular partner (CSW, NC & NR partner, male partner for MSM), multiple partner and sex after alcohol and drug use as an indicator of HIV sexual Risk Behaviour for male.[57,58] IDU always used for identify HIV risk behaviour by BSS supported by Family Health International (FHI).[59] Indian Studies of HIV/AIDS Working Group, had used paid sex, no condom use and history of Sexually Transmitted Infection (STI) as risky behaviour.[60] Latex Condoms are effective barrier for STIs including HIV.[61] And consistent condom use is protective and effective in 99 percent cases which prevented seroconversion, of HIV negative partner of discordant couple.[62] So the correct and consistent condom use is with a sex partner is treated as low risk behaviour.[63]

(b) Migration

United Nations Educational, Scientific and Cultural Organization (UNESCO), IOM and Census of India have defined the migration as the crossing of the boundary of a political or administrative unit.[34,39] There exist different types of migration depending on place, duration and frequency of migration. Census 2001 defined migrant as a person who has moved from one politically defined area (village/town) to another similar area provided his/her movement is not of purely temporary nature on account of casual leave, visits, tours, etc.[34] The migration can be temporary or permanent in nature. When the duration is considered, Census of India used less than one year as its first category. This essentially does not mean to be temporary in nature as it includes marriage as a type of migration. Different studies used different minimum duration of migration for defining migrant status. The Orissa BSS 2001 survey used migration at least for two months to

define migrant.[57] Temporary migration is ill defined in the texts and literatures and used synonymous with circular or seasonal migration.[36,37]

1.3.2. HIV Risk Behaviour, HIV epidemic and Migrants

The HIV risk behaviour is highly contextual and is a dynamic condition and our future HIV epidemic will depend on young people's risk behaviour.[3,52] As evident from rural and urban HIV burden from UNAIDS and NACO data, there exists difference in sexual behaviour and hence HIV incidence among rural and urban population.[60,64] Many literatures also mentioned difference in risk behaviour between migrant and non migrant.[41,45] So there is a need for analyzing HIV risk behaviour in local context and through regular surveillance.[3,65,66]

Though drug users can be affected by sharing an infected needle, there exists all possibility of sexual risk behaviour because of impaired judgment after drug use and financial constraint.[67,68] Not only IDU, but also alcohol, cocaine, and other drugs affecting central nervous system (both stimulant and depressant) can pose the user into risk for HIV infection.[69,70]

Many literature and UNESCO argued that migration is not itself a risk factor.[71,72] But the structural factors do play an important role in determining their risk behaviour. Income, information & risky occupational choice in poor countries determines-HIV transmission among migrants.[45,70,71] Release from social inhibition while staying alone away from home can be an important factor for determining their risk behaviour. Single male migrants in slums are prone to indulge in risk behaviour.[41] Indian use less condom. Only nine percent of risky sex acts worldwide are undertaken while using a condom and the global supply of condoms is millions short of what is needed.[72] Less use or non use of condom consistently are important in determining HIV epidemic in poor countries.[3]

Widespread poverty and migration are major factors for 'HIV transmission' & 'rural epidemics' in 3rd world countries.[3,73,74] At the same time migrants are not easily accessible for public health interventions.[73,73] Indian evidence indicates that decreased social monitoring and control can increase the likelihood of migrants engaging in commercial sex work or employing professional sex workers.[75] Despite the argument that migrants are at higher risk of HIV infection no one tested positive in Migrant Sentinel site of NACO during 2005 sentinel survey.[7] Evidence from Utter Pradesh and Thiland concluded that Migration is not a meaningful factor for HIV transmission.[71,76] A recent Rajasthan study has argued that Migration does not change an individual's sexual behaviour, but leads them to take their established sexual behaviour to areas where there is a higher prevalence of HIV.[70]

1.3.3. Role of Male Temporary Migrants in HIV Transmission

Being male and bread earner of family, adult male tend to migrate during unemployed season to an urban area, which poses him and his family at risk of HIV infection by virtue of their risk behaviour.[60,77] Even three months migration were found to be associated with risk behaviour.[76] From BSS India 2001, it is evident that a good percentage of clients of CSW are migrant workers.[48, 57] The recent evidence from the higher rural HIV incidence in Karnataka suggested that the risk and vulnerability for HIV is highly heterogeneous and copmlex.[78] Despite of the fact that monogamy can be protective, monogamous Indian women have been affected more.[79,80] The only risk for them is sex with their spouses. In Ganjam 93 percent HIV infected STD clinic attendants were migrant workers.[81] The Lepra-India society annual report 2005 also highlights that, the temporary migrants and their spouses have been affected more. The recent increase in rural and female share of

HIV burden in previously less AIDS affected migration prone, districts of India may be attributable to migration.

1.3.4. Assessment of HIV Risk Behaviour

HIV risk behaviour can be assessed by different indicators. Behavioural data are an essential complement to biological evidence of changes in HIV prevalence or incidence and for NACPs.[47,82] To track HIV epidemic, the self reported sexual behavioural data is enough as the trends in risk behaviours is of greater concern than the exact level of risk behaviour at any given point of time.[78,82] The self reported health information and behavioural data are reliable.[83,84] The self reported data can be reliable, even if collected from homeless MSMs with mental illness.[85] UNAIDS used 12 indicators to measure the HIV risk behaviour, while worldwide BSS 2001 survey used the 11 indicators. The indicators like non-regular sexual partner have shown strong positive relations with HIV prevalence.[60] But those indicators are criticized for being made universal and non-specific in some cases.[86]

1.3.5. Major Gaps in Literature

While the structural factors are significantly unique and behaviour is contextual, subject specific, and modifiable, there is no exclusive study on HIV risk bahaviour among male temporary migrants. The Orissa BSS 2001 captured the HIV risk behaviour to some extent but it is not contextual to Ganjam where half of HIV incidence of Orissa occurs. NIE 2003 Annual Report on profile of migrant worker of HIV predominant blocks of Ganjam fails to link different forms of migration and HIV prevalence. Further research is required to understand the individual and community-level factors behind the heterogeneous distribution of HIV epidemic, so that preventive interventions can be directed to where they are most needed.[87]

1.4. Justification of the Study

AIDS & Migration are two crucial global and social issues which pose a tremendous challenge to our Public Health Systems. In the current Indian context, where the rural HIV epidemic is in progress with rise in absolute number of HIV infected persons, the role of male migrants as the 'Major Bridge' got maximum attention of policy makers and civil society organizations. Though Orissa is a low prevalent state, the Ganjam district has a lion's share of its HIV/AIDS burden along with the problem of an extensive (85 percent) adult male temporary migrants and their STDs.[49,50] While the HIV transmission dynamics depends on Contextual and Subjective Risk Behaviours, the dynamic and complex interaction between HIV and migration makes it a major public health research agenda as there is a need for the contextual Policy Development and Public health interventions. Population mobility needs to be studied in its own right as one of the root causes of HIV's spread.

1.5. Objectives of the Study

(i) Major Objective:

To assess and compare the HIV Risk Behaviour between 15-49 years old male temporary migrants and non-migrants in Ganjam District of Orissa

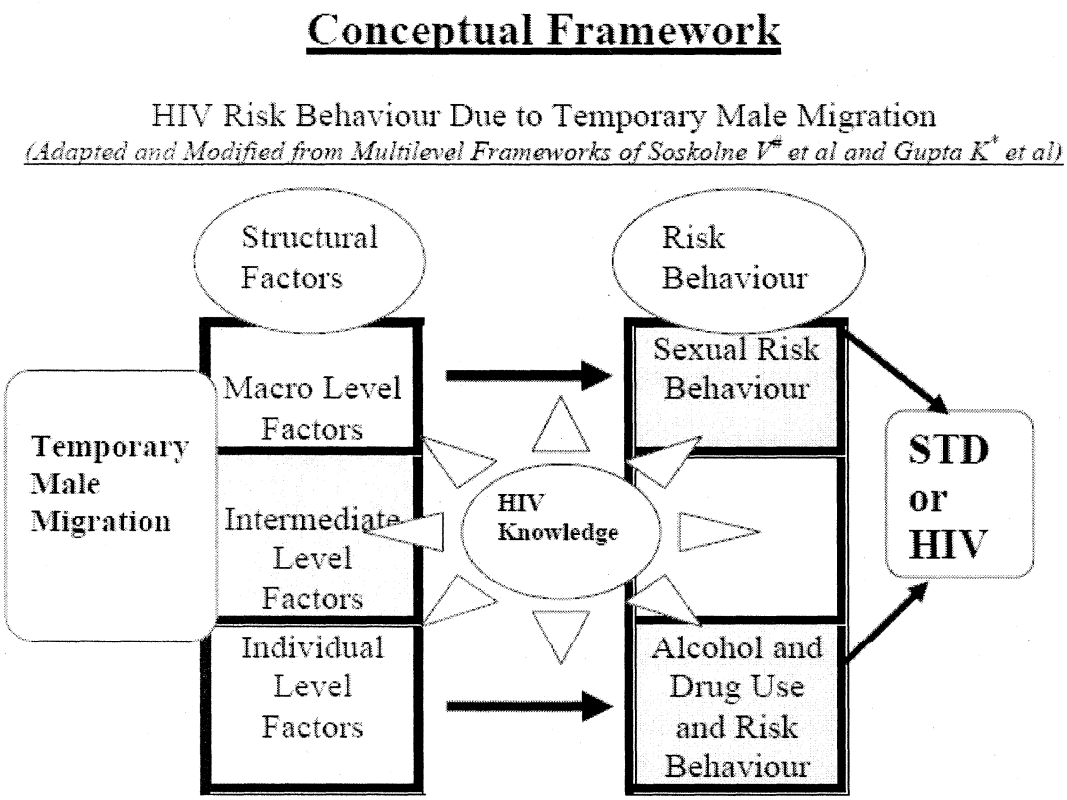
(ii) Minor Objectives:

(a) To assess the STD & HIV related knowledge between 15-49 years old male temporary migrants and non-migrants in Ganjam District of Orissa.

(b) To assess factors affecting risk behavior between 15-49 years old male temporary migrants and non-migrants in Ganjam District of Orissa.

(c) To summarise HIV risk behaviour between 15-49 years old male temporary migrants and non-migrants in Ganjam District of Orissa.

1.6. Conceptual Framework



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Chapter II

METHODS

2.1. Study Design:

This is a Cross Sectional Comparative Study.

2.2. Study Setting:

Study setting is Ganjam district of Orissa. It is situated in the coastal region of the State surrounded by Bay of Bengal, Andra Pradesh, and Khurda, Phulbani, Gajapati and Nayagarh districts of Orissa. It is situated between 190-00/ - 200-17/ North latitude and 840-6/ – 850-11/ East longitude. The geographical area of the district is 8.7 lakh hectares, one twentieth of the state area. The district consists of three sub-divisions, 22 Community Development (CD) Blocks, 441 Gram Panchayats with 3171 Villages, 17 Notified Area Council(NAC)s, and one Municipality. Ganjam district is famous for Gopalpur port at the East, Taptapani hot spring at the west. Unfortunately this area is in continuation with the high HIV prevalent costal belt of Andhra Pradesh.

2.3. Sample Size:

The sexual intercourse with any non-regular partner among male migrant worker during the preceding year of BSS survey was 13.2 percent (Orissa BSS 2001). Assuming that two percent of comparison group have sex with a non regular partner; with alpha (α) error five percent, power 80 percent the total sample size was calculated to be 208 (104 each for migrant and non migrant groups) using EpiInfo stat calculator for cross-sectional study. To compensate for Design effect in Cluster sampling, the total sample size was safely taken as 400 (200 samples from each group).

2.4. Sample Selection Procedures:

Cluster sampling selection process was used for sample selection. 40 cluster units (32 villages and eight wards) were identified as per population distribution of the district to

cover the whole district. Care was taken to include at least one village for each CD Block. No CD Block was considered for inclusion of more than two cluster units. In case of ward selection 8 wards were randomly selected from three major urban areas like Berhampur Municipality Corporation (five wards), District Head Quarter Chhatrapur NAC (two wards) and Ganjam NAC (one ward). From each cluster unit 10 samples were selected by house to house visit till 5 samples from each group interviewed.

2.5. Data Collection Techniques and Tools:

Pre-tested semi structured interview schedule was used to collect the self reported behavioural data. The tool is given in the annexure. An assistant data collector with data collection experience was hired and trained in data collection to assist the principal investigator.

2.6. Operational Definition

2.6.1 Literacy

Initially five categories included namely illiterate/no formal education, primary, secondary, graduate and higher. Those have higher secondary (intermediate) education were included in the secondary categories. While analyzing these were clubbed to illiterate, primary and secondary or more.

2.6.2 Residence

Any person belonging to a village of community development block was treated as rural. If a person resides in a ward of Municipality or Notified Area Council (NAC) was treated as urban. The slum residents were considered in the urban category.

2.6.3 Standard of Living Index (SLI)

A previously tested SLI scale that range from zero to 67 was used to assess socio economic condition. Three groups were identified on the basis of this scale: Low SLI (0-14); Medium SLI (15-24) and High SLI (25-67).

2.6.4 Occupation

Nine type of occupational information were collected including 'other' category. Only principal occupation was enlisted. While analyzing these were clubbed into four categories, Farmer, Daily Labourer, Business/Service and Others. The business/service category includes all types business (small, medium or large) and government or private service. Others category includes all other classifiable or unclassifiable group.

2.6.5 Migration

For the purpose of study only migration for more than two months was considered. Ever migration means migration for at least two months beyond the geographical boundary of Ganjam and within India before the commencement of the study. Never migrant means never migrated outside Ganjam for at least two months at a time. Intra-district migration was ignored in this study. Once a person returned from the place of migration, at least two months stay at the place of origin is required to count further migration as another migration.

2.6.6 Adult Temporary Migrant

Any adult (15-49 years) male from Ganjam district should have migrated outside Ganjam but within India at least for 2 months to 12 months at a stretch during last year. The comparison group (non migrant) constitutes adult males of Ganjam district not fitting into the definition of temporary migration. In this study unless specified, migrant means temporary migrant.

2.6.7 Female Partner

(i) Regular Partner: Spouse or living with female partner are considered as regular partner

(ii) Commercial Partner: Sexual partner obtained in exchange of money

(iii) Non-Regular and Non-Commercial partner (NR & NC): Unpaid sex with a not married or never lived with partner

(iv) Non-Regular Female Partner: Any female partner coming into either commercial or NR and NC category is termed as non regular female partner.

2.6.8 Alcohol or Drug User

Current User means use of alcohol in the preceding four weeks. Ever User means used during last 12 months. Similarly current user of any drug means use of drug preceding four weeks and ever user means use during last 12 months. In this study ever user of drug or drug use in last 12 months are synonymous to each other.

2.6.9 HIV Risk Behaviour

For heterosexual practice, HIV high risk behaviour is defined as non use of condom for sex every time or sex after consumption of alcohol (with or without condom use) with a female partner other than a regular partner. If they use condom always they are at low risk. Those have no partner other than a regular partner are at no risk. For MSM, non use of condom every time is high risk, condom use every time is low risk and those have no sex partner are not at risk.

2.6.10 HIV Knowledge

Out of all HIV facts asked, four facts were to test HIV knowledge that can help in taking HIV preventive measures. Those were correct use of condom can prevent HIV, having a single faithful partner can prevent from getting HIV, sexual abstinence can prevent HIV and Sharing HIV infected needle can cause HIV infection. First three facts were related with sexual risk behaviour which are major factors used to define HIV risk behaviour in this study. So those three facts used for analysis of modifying effect of HIV knowledge with risk behaviour. For each correct answer one score awarded and nil score awarded for

wrong answer. The composite score that combined all the 4 scores was used to measure their HIV prevention knowledge.

2.6.11: Multiple Partner:

In this study, two or more partner has been considered as multiple partner.

2.7. Outcome Variable

The outcome variable of the study is HIV Risk Behaviour, which is the combined risk behaviour with respect to male partner and non regular female sex partner (commercial or non regular and non commercial).

No risk behaviour was awarded as null, low risk as one and high risk as two score. The combined score of HIV risk behaviour with Commercial Sex Partner (CSP), Non Rgular and Non Commercial (NR and NC) and Male sex partner; and HIV risk behaviour after alcohol use are used to determine final HIV risk behaviour. Those combined score is null (no sex partner at all) are at not risk. The high HIV risk behaviour is defined as the presence of high risk behaviour in any of the above categories. Others are at low risk.

Unless otherwise specified, HIV Risk Behaviour in this study means Combined HIV Risk Behaviour over last 12 months. Current HIV risk behaviour means risk behaviour during last four weeks.

Flow Chart for Assessment of Outcome Variable

			HIV Risk
Heterosexual Risk Behaviour	No Partner		Nil
	Partner (Commercial or NR and NC)	Condom use Always	Low
		Non use of condom always	High
		Sex after alcohol use	High
MSM Risk Behviour	No Partner		Nil
	Partner	Condom use Always	Low
		Non use of condom always	High
		Anal Sex after alcohol use	High

Note: Since IDU use and other addictive drug were not found in the study population, the risk behaviour associated with those factors was not taken into consideration here.

2.8: Inclusion and Exclusion criteria:

2.8.1 Inclusion criteria:

Following subjects were considered for interview

(a) For all study subjects

(i) Male Sex

(ii) 15-49 years old

(iii) Ganjam Nativity

(iv) Availability during the visit to the cluster unit (village/ward)

(v) Willingness to participate in the study with written or verbal consent (consent of guardian in case of minor)

(b) For temporary adult male Migrants

(i) Migrated during last year only to outside Ganjam but within India

(ii) Migration duration must be more than two months and less than 12 months

(c) For Non-Migrants

(i) Never Migrant or

(ii) Migrated before the beginning of last one year preceding the study or

(iii)Migrated during last one year but duration of migration was less than two months

(iv)Migrated during last one year but within Ganjam

2.8.2 Exclusion criteria:

Following subjects were excluded from the study.

(a) For all

(i) Not willing to participate in the study

(ii) Lack of consent of Legal guardians in case of minors

(iii) Lack of time of participant during visit to the village/ward

(iv) Mentally ill and physically ill persons.

(b) For migrants

(i) Intra-district and international migration

2.9: Limitations of the study:

There may be possibility of getting wrong responses to sensitive questions like sexual behaviour and illicit drug use. Reliance on self reported behavioural data was the major limitation of the study.

The study population is representative of all the adult males of 15-49 years age of the Ganjam district. Half of it represents the temporary migrants within last year only; those were present in the study area from July to August 2007. So those temporary migrants, who were not in their home district during the study time and during visit to cluster units, were not represented.

2.10. Duration of the study:

The duration of the data collection was from 1st July 2007 till 31 August 2007.

2.11. Data Storage and Analysis:

All the information collected from the respondents were completed and validated before data entry. Data entry was done in SPSS 14.0 version and was checked for any error. Descriptive and Bivariate analyses of all the study variables were carried out. The Bivariate statistical analysis was done using Chi square tests and Spearman's rank correlation. Multivariate analysis was done using a step wise forward logistic regression model.

2.12. Expected outcomes:

I estimated and compared the Risk Behaviour between adult male temporary migrants and non-migrants. Also the determinants of risk behaviour in the context of different

structural factors were studied. By this study, I tried to understand what the important factors are or issues that we as public health professionals or policy makers need to know and address to reduce the risk behaviour and hence HIV epidemic. The study itself can supplement the BSS 2001 with respect to Ganjam district. Civil societies working in the district may use the information for their planning in HIV burden reduction strategy. The outcomes by conducting this study will benefit the society and adds more information to the available literature in India and globally.

2.13: Ethical considerations:

(i). Approval from the Institute Ethical Committee (IEC) of SCTIMST was taken before the beginning of the study.

(ii). Informed consent (written/verbal) from the respondents were taken. In case of minor the written informed consent was taken from the guardian/parent.

(iii). Strict privacy was maintained during the interview as per convenience of the respondent.

(iv). The assistant data collector had given an undertaking to not to divulge any information obtained during assisting principal investigator in data collection.

(v). Issues related with confidentiality were maintained regarding the information given by all the respondents which were in the safe custody of principal investigator and were used for only the stated research purposes.

Chapter III

RESULTS

In this chapter attempt is taken to describe sample characteristics followed by description of outcome variables. Then results of bivariate analysis, stratified analysis and multivariate analysis are presented. Both significant and non significant predictor variables were considered in the stepwise forward regression model to predict the effect of different predictor variables on outcome variable. The comprehensive layouts of all the analysis are presented with tabulations.

3.1 Sample Characteristics:

3.1.1 Socio-Demographic Information (Table-3.1.1)

The pre-designed sample selection yielded in more or less similar distribution of adult male temporary migrants and non-migrants. After data cleaning 394 individual's information were analyzed. Out of these 199 (50.51 percent) were temporary migrants as per this study's working definition. The majority (two third) of study population were from 25 to 39 years age group. Mean age of the study population was 32.82 years (migrant-34.85years and non-migrant 30.75 years). The difference in mean age between migrant and non-migrant was statistically significant (p=.000). Because of pre designed cluster sampling (40 cluster units- 32 villages and 8 wards as per the district population distribution) procedure, the distribution of migrant and non migrants in rural or urban/slum was quite similar. Almost half (47 percent) of the study population was from general caste and one third (36.3 percent) were from Other Backward Caste (OBC). Others were either Scheduled Cast (SC) or Scheduled Tribe (ST). More OBC or SC/ST populations were temporary migrant. The difference in sample population distribution between migrant and non migrant across various castes was statistically significant (p=.000).

Table-3.1.1: Socio-Demographic Information

		Migrant N=199(%)	Non-Migrant N=195(%)	All N=394(%)
AGE (Years)*	Mean ± SD	34.85±7.25	30.75± 8. 31	32.82±8.05
Age Groups* (Years)	15-19	7(3.5)	22(11.3)	29(7.4)
	20-24	11(5.5)	24(12.3)	35(8.9)
	25-29	24(12.1)	41(21.0)	65(16.5)
	30-34	41(20.6)	39(20.0)	80(20.3)
	35-39	64(32.2)	31(15.9)	95(24.1)
	40-44	30(15.1)	24(12.3)	54(13.7)
	45-49	22(11.1)	14(7.2)	36(9.1)
Present Residence	Rural	159(79.9)	155(79.5)	314(79.7)
	Urban	31(15.6)	25(12.8)	56(14.2)
	Slum	9(4.5)	15(7.7)	24(6.1)
Caste*	General	88 (44.2)	97(49.7)	185(47)
	OBC	77(38.7)	66(33.8)	143(36.3)
	SC or ST	34(17.1)	32(16.4)	66(16.8)
Religion	Hindu	197(99)	191(97.9)	388(98.5)
	Other	2(1)	4(2)	6(1.5)
Literacy	Illiterate	29 (14.6)	25(12.8)	54(13.7)
	Primary	87 (43.7)	54 (27.7)	141(35.8)
	Secondary & above	83 (41.7)	116(59.5)	199(50.5)
Number of Languages Known	One	46(23.1)	53(27.2)	99(25.1)
	Two	121(60.8)	73(37.4)	194(49.2)
	3 or more	32(16.1)	69(35.4)	101(25.6)
Occupation	Daily Labourer	86(43.2)	34(17.4)	120(30.5)
	Business/Service	43(21.0)	85(43.6)	128(32.5)
	Farmer	42(21.1)	26(13.3)	68(17.3)
	Other	28(14)	50(25.6)	78(19.8)
SLI	Mean ± SD	26.90±9.72	28.36±11.24	27.62±10.51
SLI Group*	Low	23(11.6)	34(17.4)	57(14.5)
	Medium	55(27.6)	32(16.4)	87(22.1)
	High	121(60.8)	129(66.2)	250(63.5)

**Statistically significant difference between migrant and non-migrant for a given variable*

Almost all study population was from the Hindu religion. Almost, half of the study population had secondary or higher level education. Only one in seven were illiterate. The difference in literacy level between migrant and non migrant was not statistically significant. Three fourth of study population knew two or more languages. One in three study population were daily labourer. The same was true for businessmen or government or private service holder. Farmers constitute approximately one fifth of the study population. Student, drivers, rickshaw pullers and fishermen altogether were one fifth of the sample population. Mean SLI of the sample population was 27.62 (migrant-26.90, non-migrant-28.36). But the difference in mean SLI between migrant and non-migrant was not statistically significant. Two third of the sample population were from high SLI group. Nearly on fourth were in middle SLI group. Though more non migrants were in the high SLI group, migrants were less in low SLI group than non migrants. The difference in distribution of migrants and non migrants across various SLI groups was statistically significant (p=.015).

3.1.2 Migration Information of Temporary Migrants (Table-3.1.2)

One in twenty five study populations were not residing at their birth place at present. Still fewer (1.5 percent) people had their birth place in district other than Ganjam. One in ten migrations was within Orissa. Others had migrated to different parts of India. The most frequent place traveled was Surat (60 percent) followed by Mumbai (9 percent). All migrations were to urban area only. The HIV prevalence is high in 88.44 percent of places traveled. More income was the single most frequent (79.5 percent) reason for migration followed by repayment of debt or loan (8.5 percent). The monthly average income of migrants during their migration period was around 3,400 INR. But most migrants (65 percent) had earned up to 3,000INR per month. Cultivation (31.2 percent) was the most common reason for their home return. Two third of migrants migrated with

their friends while 23.6 migrants migrated along with their spouses. Half of the study population (47.7 percent) had concrete plan for future migration, while one third (32 percent) had not decided yet (Table not presented here). Others didn't have a plan for future migration. Those who had a concrete future plan of migration have cited more income (94.7 percent) as the single most important reason for future migration. Surat (81.4 percent) is the most favorite destination for future migration.

Table-3.1.2: Information on Last Migration of Adult Temporary Migrants

		N (%)
Migrant N=199	Within Orissa	21(10.55)
	Outside Orissa	178(89.45)
Place traveled	Surat	119(60)
	Mumbai	18(9)
	Hyderabad	15(7.5)
	Other	47(23.5)
To High HIV prevalent area		176(88.44)
Reason	More Income	158(79.5)
	To pay Debt/Loan	17(8.5)
	Unemployment	9(4.5)
	Other reason	15(7.5)
Monthly Income (INR)	Average Income	3409.55±1567.298
	3000 or Less	129 (64.8)
	Above 3000	72 (35.2)
Reason for Home Return	Cultivation	62(31.20)
	No Specific reason	40(20.1)
	Festive occasions	39(19.6)
	Health Problem	32(16.1)
	Other	26(13.1)
Migrated with	With friends	135(67.8)
	With Wife	47(23.6)
	Alone	13(6.5)
	Family members other than wife	4(2.1)

Note: The information for second and third migration was incomplete in most of the cases and hence not presented here.

3.1.3. Marriage and Sexual Behaviour

(a) Marriage (Table-3.1.3)

Four in five study populations were ever married. One in three non-migrants was unmarried. The mean age at marriage was 24.41 years (migrants-25.25 years, non-migrant-23.24 years). The difference in mean age at marriage between migrant and non-migrant was statistically significant (p=.000). Nearly half of the migrants (46.7 percent) got married after the age of 25 years while more non-migrants (35.4 percent) had married between 21 and 25 years age. Three percent of married sample population had more than one spouse alive. Only ten people (all migrant) were married and had another living with partner.

Table-3.1.3 Marriage and living with partner information

Ever Married		Migrant (181)	Non-Migrant (130)	All (311)
Age at Marriage (Years)	Mean ±SD p=.000	25.25 ± 3.01	23.24± 2.89	24.41 ± 3.12
Age at Marriage Group (Years)	<21	18(9)	31(15.9)	49(12.4)
	21-25	70(35.2)	69(35.4)	139(35.3)
	>25	93(46.7)	30(15.4)	123(31.2)
	Never married	18(9)	65(33.3)	83(21.1)
More than one Spouse Alive	Yes	6(3.3)	3(2.3)	9(2.9)
	No	175(96.7)	127(97.7)	302(97.1)
Current marital status	Currently married, living with spouse	59(29.6)	128(65.6)	187(47.5)
	Currently married, living with other sexual partner	10(5.0)	0(.0)	10(2.5)
	Married but not living with any woman	112(56.3)	2(1.0)	114(28.9)
	Unmarried but not living with any female sexual partner	18(9.0)	65(33.3)	83(21.1)

(b) Sexual Behaviour {Table-3.1.3 (b)}

(i) Age at First Sex

The mean age at first sex of migrants (23.92 years) was higher than non migrants (22.56 years) and it was statistically significant (p=.000). In the study population 28.2 percent married people had sex before marriage and 28.9 percent unmarried ever had sexual partner. The proportion of sex before marriage and unmarried but had sex among migrant was higher than non migrant and it was statistically significant. Eight five percent of study population (migrant 94.5 percent) ever had female sexual partner with 23.33 years as mean age at first sex. Around two third of migrants had sex with a female partner after the age of 20. But half of the non migrants had sex before the age of 21.

(ii) Regular Sex Partner

Slightly more than three fourth of the study sample population had a regular partner during last 12 months and last four weeks. The multiple regular partners among the study population were 4.6 percent. Multiple regular partners among migrant (7.5 percent) were five times higher than non migrants (1.5 percent) and it was statistically significant.

(iii) Commercial Sex Partner

During the last 12 months, 11.2 percent study population had commercial sex partner and during the last four weeks, it was 8.1 percent. The migrants had two times higher commercial sex partner than non migrants during last 12 months and also last four weeks. Around nine percent study population (migrant 14.6 percent and non migrant 3.1 percent) had multiple CSP during last year. The multiple CSP among the study population, during last four weeks was 4.1 percent (migrant 6 percent and non migrant 2.1 percent). Migrants had three to four times higher

Table-3.1.3 (b) Sexual Partner Information

		Migrant N=199	Non-Migrant N=195	All N=394
Sex with a Female Partner	last 12 months	188(94.5)	147(75.4)	335(85.0)
AGE at First Sex* (Years)	Mean Age ±SD	23.92 ± 3.15 N=188	22.56± 3.02 N=147	23.33 ± 3.16 N=315
AGE at First Sex Group In Years	Never have sex	11(5.5)	48(24.6)	59(15.0)
	<18 years age	5(2.5)	3(1.5)	8(2.0)
	19 to 20 years age	37(18.6)	45(23.1)	82(20.8)
	21 to 25 years age	78(39.2)	73(37.4)	151(38.3)
	26 or above age	68(34.2)	26(13.3)	94(23.9)
Regular Sex partner	Last 12 Months	177(88.94)	130(66.67)	307(77.98)
	Last 4 weeks	177(88.94)	124(63.59)	301(76.4)
Multiple Regular Partner*	Last 12 Months	15(7.5)	3(1.5)	18(4.6)
CSP	Last 12 Months	30(15.1)	14(7.2)	44(11.2)
	Last 4 weeks	12(6)	4(2.1)	16(4.1)
Multiple CSP*	Last 12 months	29(14.6)	6(3.1)	35(8.9)
	Last 4 weeks	12(6)	4(2.1)	16(4.1)
NR and NC Female Sex partner*	Last 12 Months	41(20.61)	16(10.67)	57(14.47)
	Last 4 weeks	23(11.6)	10(5.13)	33(8.4)
Multiple NR and NC Female SP*	Last 12 Months	40(20.1)	7(3.6)	47(11.9)
	Last 4 weeks	21(10.6)	1(.5)	22(5.6)
Any Non Regular Female Sex partner*	Last 12 Months	52(26.13)	30(15.38)	82(20.81)
	Last 4 weeks	47(23.6)	22(11.3)	69(17.5)
Multiple Non Regular Female Sex Partner*	Last 12 Months	50(25.1)	13(6.7)	63(16)
	Last 4 weeks	36(18.1)	5(2.6)	41(10.4)
MSM	Ever	17(8.54)	0(0)	17(4.31)
	Last Year	10(5.03)	0(0)	10(2.54)
	Last Month	1(.5)	0(0)	1(.25)

**Statistically significant difference between migrant and non-migrant for a given variable*

multiple CSP during last four weeks as well as during last 12 months. The difference in having a CSP was not statistically significant. The difference in having multiple CSP was statistically significant between migrant and non migrant.

(iv) Non Regular and Non-Commercial (NR and NC) Sex Partner

Around 15 percent of the study population had NR and NC sex partner during last 12 months. This figure for last four weeks was 8.4 percent. The migrants had two times higher NR and NC sex partner than non migrants during last 12 months and also during last four weeks. More migrants also had multiple NR and NC Sex partner during last month (10.6 percent) and last year (20.1 percent) in comparison to non migrants (0.5 percent and 3.6 percent respectively). The difference in having multiple NR and NC sex partner between migrant and non migrant over the last month and the last year was statistically significance (p=.000)

(iv) Any Non Regular Female Sex Partner

During the past one year one in five had a non regular partner. Similar trend also was observed during last one month preceding the study. More migrants had non regular partner. Migrants had four to six times higher multiple non regular partners than non migrants.

(v) Male Sex Partner

Anal sex was reported by migrants only. Only 17 people ever had anal sex. One in 20 migrant had anal sex during past 12 months. Only one migrant had reported anal sex during last 4 weeks.

(c) Knowledge of Male Condom and its Use

(i) Knowledge of Male Condom and its Availability {Table-3.1.3.(c)i} Almost all (99.7 percent) people ever heard of male condoms and know at least

one place of condom availability. The knowledge of place of condom availability is slightly higher among migrants. The most frequent place of male condom availability known was medicine store (94.9 percent) followed by general store (53.3 percent) and family planning centers (33.25 percent). The least frequent place of condom availability known was diagnostic centre (0.76 percent). The concept of health worker providing male condom was quite high (91.1 percent). The concept of peer educator providing male condom was very low (.5 percent) and nil among migrants.

Table-3.1.3(c)i Knowledge of Condom Availability

		Migrant (199)	Non-Migrant (195)	All (394)
Ever Heard of Male Condoms		199(100.0)	194(99.5)	393(99.7)
Knowledge of Male Condom Availability		198(99.5)	189(96.9)	387(98.2)
	Medicine Store	191(96.0)	183(93.8)	374(94.9)
	FPC	43(21.61)	88(45.13)	131(33.25)
	NGO	61(30.7)	53(27.2)	114(28.9)
	General Store	91(45.7)	119(61.0)	210(53.3)
	Hotel/Bar	32(16.08)	46(23.59)	78(19.8)
	Hospital	29(14.57)	54(27.69))	83(21.07)
	Diagnostic centre	1(.5)	2(1)	3(.76)
Knowing a person who can provide/avail male condom				
	Health Worker	176(88.4)	183(93.8)	359(91.1)
	Friend	2(1.0)	2(1.0)	4(1.0)
	Peer Educator	0(.0)	2(1.0)	2(.5)
	Other Person	13(6.5)	1(.5)	14(3.6)
	Knows two persons	4(2.0)	0(.0)	4(1.0)
	Not Known	4(2.0)	7(3.6)	11(2.8)

(ii) Male Condom Use

(1) During Last Sexual Act {Table-3.1.3.(c)ii}

Condom use during last sexual act with regular partner was two percent, with CSP was 93.2 percent and with NR and NC partner was 38.6 percent. When a male condom was used, the male condom use with a CSP or NR and NC sex partner

was mostly determined by female sex partner (above 85 percent), while male condom use with regular partner was mostly determined by male (50 percent) partner than female partner (23.3 percent).The most frequent reason for non use of condom during last sex with a regular partner cited was dislike for male condom(60.8 percent) followed by the perception of 'not necessary' (22.9 percent) and use of other contraceptive(15 percent). For migrants dislike (81.5 percent) was the most frequent reason while perception of not necessary (37.5 percent) followed by dislike (32.8 percent) and use of other contraceptive (27.3 percent) was equally cited as reasons. The most frequent reason for non use of condom during last sex with a NR and NC sex partner cited was use of other contraceptive (65.7 percent) followed by perception of not necessary (22.9 percent). For migrants use of other contraceptive (80 percent) was the most frequent reason while for non migrants use of other contraceptive (46.7 percent) and perception of not necessary (33.3 percent) was the commonly cited reason. Very few, having CSP had not used male condom during last sex because of not availability of male condom.

Table-3.1.3.(c)ii Condom Use during Last Sexual Act

Last Sex with		Migrant (199)	Non-Migrant (195)	All (394)
Regular partner	Yes	4(2.3)	2(1.5)	6(2.0)
	No	173(97.7)	128(98.5)	301(98.0)
Commercial Partner	Yes	29(96.7)	12(85.7)	41(93.2)
	No	1(3.3)	2(14.3)	3(6.8)
NR and NC partner	Yes	21(51.2)	1(6.3)	22(38.6)
	No	20(48.8)	15(93.8)	35(61.4)

(2) Male Condom Use Pattern over Last Year

Over last year the male condom used every time for sex with regular partner was only 1.6 percent. The use of condom with CSP and NR and NC SP were 54.4 percent and 8.8 percent respectively (Table not presented). Non migrants used fewer condoms than migrants during sex with a female partner. The condom use pattern was not consistent among both migrants and non migrants.

3.1.4. STD and HIV/AIDS Knowledge

(a) STD Knowledge

(i) STD Symptom Known {Table-3.1.4(a)}

Majority of people (84 percent) had ever heard of STDs. More migrants (87.9 percent) than non migrants (79.5 percent) had ever heard of STDs. More people were aware of male STD symptoms than female STD symptoms. More migrants (male STD 87.9 percent and female STD 81.4 percent) were aware of at least one symptom of male or female STDs respectively than non migrants (male STD 76.4 percent, female STD 73.8 percent). More of non migrants 22.1 percent and 26.2 percent were not aware of any symptoms of male or female STD symptoms of STD respectively. The most common female STD symptom known was itching of genitalia (54.6 percent) and the least frequent female STD symptom known was abdominal pain (14 percent). The most common male STD symptom known was itching of genitalia (65.2 percent) and the least frequent male STD symptom known was swelling in groin area (11.4 percent).

(ii) Occurrence Self reported symptoms highly suggestive of STDs

Genital discharge or genital ulcer/sore symptoms are highly suggestive of STDs in male. One fourth of the study population had reported to have these symptoms

during last year. The occurrence of these symptoms were significantly (p=.006) higher among migrants (31.7 percent) than non migrants (19.5 percent).

(b) HIV/AIDS Fact Known {Table-3.1.4(b)}

All study population had ever heard of HIV or AIDS. While 31 percent people knew a HIV infected person or AIDS death. Around one in ten people knew a HIV infected friend or relative. The migrants proportionately knew more HIV infected people or friend or relative with HIV. The mean score (out of 10) for the correct fact known about HIV or AIDS was 6.95. The mean score for migrant (6.61) was significantly (p=.000) lower than that of non migrants (7.3). The most common fact known about HIV was condom use can prevent HIV (89.9 percent) and the least frequent fact known about HIV was sharing meal can't transmit HIV (44.4 percent).

Table-3.1.4.(a) STD Symptoms Known

		Migrant N=199(100)	Non-Migrant N=195(100)	All N=394(100)
Ever Heard of STDs	Yes	175(87.9)	155(79.5)	331(84.0)
	No	24(12.1)	40(20.5)	64(16.2)
Knowledge at least one of Symptoms of STD	Male STD	175(87.9)	149(76.4)	324(82.2)
	Female STD	162(81.4)	144(73.8)	306(77.7)
	Not Heard	24(12.1)	40(20.5)	64(16.2)
Female STD Knowledge	No Symptom Known	37(18.6)	51(26.2)	88(22.3)
	Only One Symptom Known	13(6.5)	23(11.8)	36(9.1)
	Two or More Symptom Known	149(74.9)	121(62.1)	270(68.5)
Male STD Knowledge	No Symptom Known	28(14.1)	43(22.1)	71(18.0)
	Only One Symptom Known	28(14.1)	21(10.8)	49(12.4)
	Two or More Symptom Known	143(71.9)	131(67.2)	274(69.5)

Out of all HIV facts asked, four facts were to test HIV knowledge that can help in taking HIV preventive measures. Those were correct use of condom can prevent HIV, having a

single faithful partner can prevent from getting HIV, sexual abstinence can prevent HIV and Sharing HIV infected needle can cause HIV infection. First three facts were related with sexual risk behaviour which are major factors used to define HIV risk behaviour in this study. So those three facts were used for analysis of modifying effect of HIV knowledge with risk behaviour. For each correct answer one score was awarded and nil score was awarded for wrong answer. The combined score of all these were used to measure their HIV prevention knowledge. By these 4.1 percent, 9.6 percent, 33 percent, and 53.3 percent people scored null, one, two, and three respectively. Null scored has nil knowledge, those scored 1 or 2 have average knowledge and those who scored 3 have good knowledge. More non migrants (59.5 percent) had higher knowledge than migrants (48.2 percent). There was statistically significant (p=.004) difference existing for HIV knowledge level between migrants and non migrants.

3.1.5 Drug or Alcohol Use (Table-3.1.5)

(a) Tobacco Use

The ever use of any form of tobacco among study sample was 87.1 percent. Migrants (96 percent) were more user of tobacco than non migrants (77.9 percent).

(b) Alcohol Use

Alcohol use among study population during last one year was 52.3 percent while during last four week was 47.5 percent. Migrants (last year 59.3 percent, last month 58.8 percent) were more user of alcohol than non migrants (last year 45.1 percent, last month 35.9 percent).

(c) Ganja Use

Ganja use among study population during last one year was 25.1 percent while during last four week was 17.5 percent. Migrants (24.1 percent) were less ever user of ganja

(26.2 percent) than non migrants, while more migrants (22.1 percent) were current user of ganja than non migrants (12.8 percent).

(d) Bhang Use

Bhang use among study population during last one year was 40.6 percent while during last four week was 35.3 percent. Migrants (last year 46.7 percent, last month 42.7 percent) were more user of bhang than non migrants (last year 34.4 percent, last month 27.7 percent).

(e) Opium Use

Opium use among study population during last one year was 6.6 percent while during last four week was 3.3 percent. Migrants (last year 9.5 percent, last month 5.5 percent) were more user of opium than non migrants (last year 3.6 percent, last month 1 percent).

(f) Sexual Behaviour after Drug or Alcohol Use

Sexual desire after alcohol or drug use was 14.72 percent (migrant 21.1 percent, non migrant 8.4 percent) in the study population. Sex with a regular partner after drug or alcohol use was 7.36 percent (migrant 12.1 percent and non migrant 2.56 percent) in the study population. Sex with non regular female sex partner after drug or alcohol use was 7.36 percent (migrant 11.1 percent and non migrant 3.59 percent) in the study population.

3.2 Determinants of HIV Risk Behaviour

For heterosexual practice, HIV high risk behaviour is defined as non use of condom for sex every time or sex after consumption of alcohol (with or without condom use) with a female partner other than a regular partner. If they use condom always they are at low risk. Those having no partner other than a regular partner are at no risk. For MSM non use of condom every time is high risk, condom use every time is low risk and those

having no sex partner are not at risk. No risk behaviour was awarded as null, low risk as one and high risk as two score. The combined score of HIV risk behaviour with CSP, NR and NC Sex partner and HIV risk behaviour after alcohol use was used to determine final HIV risk behaviour. Those with combine score null (no sex partner at all) are at not risk. The high HIV risk behaviour is defined as the presence of high risk behaviour in any of the above categories. Others are at low risk.

Table-3.2.1 Risk Behaviour during last 4 weeks

	Risk	Last 4 weeks			
		Migrant	Non-Migrant	All	*p**
CSP	No or Low	190(95.5)	190(97.)	380(96.4)	
	High	9(4.5)	5(2.6)	14(3.6)	
NR & NC SP	No or Low	183(92)	194(99.5)	377(95.7)	.000
	High	16(8)	1(.5)	17(4.3)	
MSM	No or Low	199(100)	195(100)	394(100)	
	High	0(0)	0(0)	0(0)	
Alcohol use and risk	No or Low	161(80.9)	183(93.8)	344(87.3)	.000
	High	38(19.1)	12(6.2)	50(12.7)	
HIV Risk Behaviour	Nil or Low	155(77.9)	181(92.8)	336(85.3)	.000
	High	44(22.1)	14(7.2)	58(14.7)	

* Comparison between migrant and non migrant

Though the high risk behaviour with CSP among migrant was approximately twice that of non migrant during last one year and last one month, and it was not statistically significant. The high risk behaviour with NR and NC sex partner among migrant was higher than non migrant during last one year and last one month, and it was statistically significant. There was no current high risk behaviour for MSM, but the high risk behaviour for MSM during last one year was only shown by migrants. The high risk behaviour after alcohol use was thrice among migrant than non migrant during last one year and also during last month, and it was statistically significant. The combined HIV

high risk behaviour among migrant was thrice during last one month and nearly twice during the last one year and it was statistically significant.

Table-3.2.2 Risk Behaviour during last 12 months

	Risk	Last 12 months			
		Migrant	Non-Migrant	All	*p**
CSP	No or Low	185(93.0)	189(96.9)	374(94.9)	
	High	14(7.0)	6(3.1)	20(5.1)	
NR & NC SP	No or Low	163(81.9)	179(91.8)	342(86.8)	.004
	High	36(18.1)	16(8.2)	52(13.2)	
MSM	No or Low	191(96)	195(100)	386(98.0)	
	High	8(4)	0(.0)	8(2.0)	
Alcohol use and risk	No or Low	177(88.9)	188 (96.4)	365(92.6)	.005
	High	22(11.1)	7(3.6)	29(7.4)	
HIV Risk Behaviour	Nil or Low	148(74.4)	167(85.6)	315(79.9)	.005
	High	51(25.6)	28(14.4)	79(20.1)	

* *Comparison between migrant and non migrant*

3.3 Bivariate Analysis

3.3.1 Significant Covariates (Table-3.3.1)

(a) HIV prevention Knowledge and HIV risk Behaviour over last 12 months:

It was found that there is a statistically significant (p=.001) negative correlation between HIV prevention knowledge score and HIV risk behaviour score shown by the study population during last one year. The Spearman's rho was found to be -0.173. Other important covariates significant covariates were caste, occupation, multiple regular partner, and number of ever migration.

(b) Caste and HIV Risk Behaviour

More of the OBC and SC or ST people had shown more HIV high risk behaviour during last month and last one year than general caste, which was statistically significant. The high risk behaviour was more among SC or ST population.

(c) Occupation and HIV Risk Behaviour

Daily labourer and farmers had shown comparatively more high risk behaviuor than other groups. The difference in high risk behaviour across occupational category was statistically significant.

(d) Number of Ever migration and Risk Behaviour

As the number of migration increases the risk behaviour increases, which is true in case of current high risk behaviour. In case of HIV risk behaviour during last one year, the once migration had shown more HIV risk behaviour than migration for two or more times.

(e) Multiple Regular Partners

Nearly half of those had multiple regular partners, also showed high HIV risk behaviour during last 12 months and last 4 weeks

3.3.2 Non Significant Covariates: During bivariate analysis the theoretical predictors of risk behaviour like literacy, age, SLI, and present residence were found to be statistically not significant association (Table-3.3.2).

Table-3.3.1 Significant covariates for HIV risk behaviour

Covariates		RISK LAST YEAR		
		NIL OR LOW	HIGH	*p*
Caste	General	160(86.5)	25(13.5)	.007
	OBC	108(75.5)	35(24.5)	
	SC OR ST	47(71.2)	19(28.8)	
Occupation	Farmer	49(72.1)	19(27.9)	.000
	Daily Labourer	84(70.0)	36(30.0)	
	Business/Service	117(91.4)	11(8.6)	
	Other	65(83.3)	13(16.7)	
Ever Migration Number	Null	144(89.4)	17(10.6)	.000
	Once	66(77.7)	26(28.3)	
	Two or more	105(74.5)	36(25.5)	
Multiple Regular Partner	Nil	307(81.6)	69(18.4)	.000
	Yes	8(44.4)	10(55.6)	

Table-3.3.2. Non significant factors in bivariate analysis

		RISK LAST YEAR		
		NIL OR LOW	HIGH	*p*
SLI	Low	48(84.2)	9(15.8)	NS
	Medium	67(77.0)	20(23.0)	
	High	200(80.0)	50(20.0)	
Age Group In Years	15-19	27(93.1)	2(6.9)	NS
	20-24	25(71.4)	10(28.6)	
	25-29	49(75.4)	16(24.6)	
	30-34	63(78.8)	17(21.3)	
	35-39	82(86.3)	13(13.7)	
	40-44	40(74.1)	14(25.9)	
	45-49	29(80.6)	7(19.4)	
Residence	Rural	252(80.3)	62(19.7)	NS
	Urban/Slum	63(78.8)	17(21.3)	
Literacy	Illiterate	38(70.4)	16(29.6)	NS
	Primary	117(83.0)	24(17.0)	
	Secondary and above	160(80.4)	39(19.6)	
Income of Migrant (INR)	Nil	3(100.0)	0(.0)	NS
	3000 or Less	97(77.0)	29(23.0)	
	> 3000	48(68.6)	22(31.4)	

** NS=Non Significant*

3.4 Stratified Analysis of Covariates Stratified by Temporary Migration Status

Migrants with medium SLI had shown three times higher risk behaviour than non migrants with medium SLI. And migrants with high SLI had shown one and half times more high risk behaviour than non migrant with high SLI. The migrant general caste had shown twice higher risk behaviour than non migrant general caste. And migrant SC or ST had shown slightly lower than three times higher risk behaviour than non migrant SC or ST population. The high risk behaviour decreases as literacy level increases for both migrant and non migrant. The migrant illiterate had shown around four times high risk

Table 3.4. Stratified Analysis of Covariates by Temporary Migration Status

Migration Status	Covariates		Last 12 Months		
			Nil or Low	High	*P**
Migrant	SLI	Low	19(82.6)	4(17.4)	
		Medium	38(69.1)	17(30.9)	
		High	91(75.2)	30(24.8)	
Non-Migrant	SLI	Low	29(85.3)	5(14.7)	
		Medium	29(90.6)	3(9.4)	
		High	109(84.5)	20(15.5)	
Migrant	Caste	General	72(81.8)	16(18.2)	.030
		OBC	56(72.7)	21(27.3)	
		SC or ST	20(58.8)	14(41.2)	
Non-Migrant	Caste	General	88(90.7)	9(9.3)	
		OBC	52(78.8)	14(21.2)	
		SC or ST	27(84.4)	5(15.6)	
Migrant	Literacy	Illiterate	16(55.2)	13(44.8)	.037
		Primary	68(78.2)	19(21.8)	
		Secondary and above	65(78.3)	18(21.7)	
Non-Migrant	Literacy	Illiterate	22(88.)	3(12)	
		Primary	49(90.7)	5(9.3)	
		Secondary and above	108(93.1)	8(6.9)	
Migrant	occupation	Farmer	31(73.8)	11(26.2)	
		Daily Labourer	60(69.8)	26(30.2)	
		Service or Business	36(83.7)	7(16.3)	
		Other	21(75)	7(25.0)	
Non-Migrant	Occupation	Farmer	18(69.2)	8(30.8)	
		Daily Labourer	24(70.6)	10(29.4)	
		Service or Business	81(95.3)	4(4.7)	
		Other	44(88.)	6(12.)	
Migrant	Residence	Rural	131(84.5)	24(15.5)	
		Urban/Slum	27(67.5)	13(32.5)	
Non-Migrant	Residence	Rural	131(84.5)	24(15.5)	
		Urban/Slum	36(90)	4(10)	
Migrant	Multiple regular partner	NIL	142(77.2)	42(22.8)	.002
		YES	6(40.0)	9(60)	
Non-Migrant	Multiple regular partner	NIL	165(85.9)	27(14.1)	
		YES	2(66.7)	1(33.3)	
Migrant	Age Group	15-24	12(66.7)	6(33.3)	
		25-34	51(78.5)	14(21.5)	
		>34	85(73.3)	31(26.7)	
Non-Migrant	Age Group	15-24	40(87)	6(13)	.003
		25-34	61(76.3)	19(23.8)	
		>34	66(95.7)	3(4.3)	

** Comparison within different covariates separately both for migrant and non migrant*

Table 3.4. Stratified Analysis of Covariates by Temporary Migration Status

Migration Status	Covariates		Last 12 Months		
			Nil or Low	High	*P**
Migrant	SLI	Low	19(82.6)	4(17.4)	
		Medium	38(69.1)	17(30.9)	
		High	91(75.2)	30(24.8)	
Non-Migrant	SLI	Low	29(85.3)	5(14.7)	
		Medium	29(90.6)	3(9.4)	
		High	109(84.5)	20(15.5)	
Migrant	Caste	General	72(81.8)	16(18.2)	.030
		OBC	56(72.7)	21(27.3)	
		SC or ST	20(58.8)	14(41.2)	
Non-Migrant	Caste	General	88(90.7)	9(9.3)	
		OBC	52(78.8)	14(21.2)	
		SC or ST	27(84.4)	5(15.6)	
Migrant	Literacy	Illiterate	16(55.2)	13(44.8)	.037
		Primary	68(78.2)	19(21.8)	
		Secondary and above	65(78.3)	18(21.7)	
Non-Migrant	Literacy	Illiterate	22(88.)	3(12)	
		Primary	49(90.7)	5(9.3)	
		Secondary and above	108(93.1)	8(6.9)	
Migrant	occupation	Farmer	31(73.8)	11(26.2)	
		Daily Labourer	60(69.8)	26(30.2)	
		Service or Business	36(83.7)	7(16.3)	
		Other	21(75)	7(25.0)	
Non-Migrant	Occupation	Farmer	18(69.2)	8(30.8)	
		Daily Labourer	24(70.6)	10(29.4)	
		Service or Business	81(95.3)	4(4.7)	
		Other	44(88.)	6(12.)	
Migrant	Residence	Rural	131(84.5)	24(15.5)	
		Urban/Slum	27(67.5)	13(32.5)	
Non-Migrant	Residence	Rural	131(84.5)	24(15.5)	
		Urban/Slum	36(90)	4(10)	
Migrant	Multiple regular partner	NIL	142(77.2)	42(22.8)	.002
		YES	6(40.0)	9(60)	
Non-Migrant	Multiple regular partner	NIL	165(85.9)	27(14.1)	
		YES	2(66.7)	1(33.3)	
Migrant	Age Group	15-24	12(66.7)	6(33.3)	
		25-34	51(78.5)	14(21.5)	
		>34	85(73.3)	31(26.7)	
Non-Migrant	Age Group	15-24	40(87)	6(13)	.003
		25-34	61(76.3)	19(23.8)	
		>34	66(95.7)	3(4.3)	

** Comparison within different covariates separately both for migrant and non migrant*

behaviour than non migrant illiterate. Similarly migrant primary educated and secondary/higher educated had shown roughly two and half times and three times respectively higher risk behaviour than primary educated and secondary/higher educated non migrants. In occupation category migrant businessmen or service holder had shown more than three times higher high risk behaviour than non migrant businessmen or service holder. And other occupational migrants group (which includes rickshaw puller, driver and student) had shown twice high risk behaviour than other occupational non migrant group. The migrants from urban or slum had shown one and half times higher HIV risk behaviour than non migrants from urban or slum area. Migrants with multiple regular partners had shown two times higher risk behaviour than non migrants with multiple regular partners. Migrants above 34 years age had shown nearly seven times high risk behaviour than non migrant above 34 years age. This study also found that though there was no significant high risk behaviour between ever married (18.3 percent) and never married (26.5 percent), the migrant never married had shown significantly high risk behaviour than ever married migrants (table not presented).

3.5 Multivariate analysis

Step wise forward multiple logistic regression model was constructed using HIV risk behaviour as a binary dependent variable. All the significant and non significant predictor variables discussed above were considered in the initial model. First model was based on temporary migration status while second model considered number of ever migrations along with other predictor variables of HIV risk behaviour.

In the first model temporary migration status turned statistically insignificant in determining HIV risk behaviour. However people with multiple regular partner had 6.72 higher odds of high risk behaviour (95% CI: 2.24-20.12) than those didn't have. People within 20 to 24 years and 25 to 29 years age group had shown 9.29 fold (95%CI: 1.69-

51.18) and 5.26 fold (95%CI: 1.03-26.89) high risk behaviour compared to 15 to 19 years age group. OBC category had shown 2.44 fold (95%CI: 1.29-4.60) high risk behaviour than general caste. Daily labourer had shown 3.27 fold (95% CI: 1.43-7.49) high risk behaviour compared to other occupational categories.

Model 1

Predictor Variables	Adjusted Odds ratio	95% CI of OR		*p* value
		Lower	Upper	
Caste				
General	Reference category			
OBC	2.44	1.29	4.60	*.006
SC/ST	1.79	.82	3.92	.146
Occupation				
Other	Reference category			
Farmer	1.91	.79	4.56	.148
Daily labourer	3.27	1.43	7.48	*.005
Business/Service	.51	.21	1.27	.149
Age Group (complete years)				
15-19 years	Reference category			
20-24 years	9.29	1.69	51.18	*.010
25-29 years	5.26	1.03	26.89	*.046
30-34 years	3.77	.76	18.73	.105
35-39 years	1.59	.32	7.99	.569
40-44 years	3.57	.68	18.64	.132
45-49 years	2.11	.38	11.77	.396
Multiple regular partner				
Nil	Reference category			
Yes	6.72	2.24	20.13	*.001
* significant *p* value				
Note: Other factors included in the initial model are SLI, HIV prevention knowledge, literacy, present residence, and temporary migrant status but excluded in the final model because of statistical non significance				

Model 2

Variables	Adjusted Odds Ratio	95% CI of OR		*p* value
		Lower	Upper	
Caste				
General	Reference category			
OBC	2.44	1.28	4.63	*.006
SC/ST	1.79	.81	3.96	.149
Age Group (completed years)				
15-19 years	Reference category			
20-24 years	8.79	1.52	51.04	*.015
25-29 years	4.53	.85	24.14	.077
30-34 years	3.19	.60	16.95	.172
35-39 years	1.24	.24	6.57	.797
40-44 years	3.16	.56	17.86	.193
45-49 years	1.87	.30	11.53	.502
Occupation				
Other	Reference category			
Farmer	1.76	.71	4.36	.220
Daily labourer	2.84	1.20	6.72	*.018
Business/Service	.54	.21	1.38	.197
Number of Ever Migrations				
Never migrant	Reference category			
Ever Migrant once only	2.57	1.21	5.43	*.014
Ever Migrant for 2 or more times	2.17	1.05	4.49	*.037
Multiple Regular Partner				
Nil	Reference category			
Yes	5.75	1.94	17.06	*.002
* significant *p* value				
Note : Other factors included in the initial model are SLI, HIV prevention knowledge, literacy, and present residence but excluded in the final model because of statistical non significance.				

However the second model based on number of ever migrations, suggests that those ever migrated once had shown 2.57 times (95% CI: 1.21-5.4) high HIV risk behaviour than never migrant. And ever migrated for two or more times had shown 2.17 times (95% CI: 1.05-4.49) high HIV risk behaviour than never migrant. People with multiple regular partners had 5.75 higher odds of high risk behaviour (95% CI: 1.94-17.06) than those without multiple regular partners. People within 20 to 24 years age group had shown 8.8 fold (95%CI: 1.52-51.04) high risk behaviour compared to 15 to 19 years age group. OBC category had shown 2.44 fold (95%CI: 1.28-4.63) high risk behaviour than general caste. Daily labourer had shown 2.84 fold (95% CI: 1.2-6.7) high risk behaviour compared to other occupational categories.

Chapter IV

DISCUSSION

This chapter interlinks different findings of the study as well as other existing literature with respect to issues analyzed in this study.

4.1 Facts about STDs and HIV/AIDS

4.1.1 Ever heard of STD/HIV

BSS 2001 indicates that more high risk group surveyed (Orissa-97.1 percent, India-75.6 percent) were ever heard of STDs than the study population (84 percent, migrant-87.9 percent).[48] Another Surat migrant worker study (2002) indicates a lower percent of migrant worker ever heard of STDs.[41] Interestingly, the knowledge of at least one symptom of STD was slightly higher among the study population than high risk groups studied in BSS 2001 (Orissa 75.4, India 68.2).[48]

In this study, all the study population had ever heard of HIV/AIDS and fewer (84 percent) study population had ever heard of STDs. This indicates more restricted knowledge about STDs than HIV/AIDS among the study population. A similar trend was observed in a Surat migrant worker study. (ever heard of STD-47 percent, HIV/AIDS-87 percent).[41] The trend was similar for India in BSS 2001 (ever heard - STD 75.6 %, HIV/AIDS 95.9%) but an opposite trend was observed for Orissa (ever heard of STD-97.1 percent, HIV/AIDS-94.4 percent). The percentage of ever married men who had ever heard of HIV/AIDS in NFHS –III was quite less (Orissa-73 percent, India-70 percent) than the study population.[88,89] But the urban ever married male who had ever heard of HIV/AIDS was quite high (Orissa-92 percent, India-94 percent) in NFHS-III.

4.1.2 Self reported symptoms suggestive of STDs

NFHS-III indicated only five percent STDs among the population. Prevalence of self reported symptoms suggestive of STDs was 25.6 percent among the study population.

The self reported STD was two to three fold higher in the study population than high risk groups of Orissa BSS 2001. But the validity of self reported STD is questionable.

4.2 HIV Knowledge

4.2.1 HIV Prevention Knowledge

This study has shown significant high HIV prevention knowledge among non migrants (59.5 percent) than migrants (48.2 percent). Also the study indicated that more urban male (78.3 percent) have higher HIV prevention knowledge than rural male (48.7 percent) of the Ganjam district. Interestingly those with multiple regular partners have less (11.1 percent) high HIV prevention knowledge than those didn't have multiple regular partners (55.3 percent), which might have resulted in significant risk behaviour between these two groups. The 15 to 24 and 25 to 34 years age group had similar high HIV prevention knowledge (58 percent) and it was non-significantly higher than 35 to 49 years (47 percent) age group. Among occupational groups, other category and business or service category had more high HIV prevention knowledge than farmer and daily labourer. More of forward caste had high HIV prevention knowledge than backward castes and scheduled tribes or scheduled castes. The difference in HIV prevention knowledge was statistically significant across various occupations and castes.

Though more study population (89.4 percent) was aware about consistent condom use as a prevention method than the NFHS-III figure (59.4), the same knowledge was quite similar among temporary migrants (58.2percent). This indicated that high proportion of non migrants were aware of condom as HIV prevention method than non migrants.

4.2.2 HIV Comprehensive Knowledge

NFHS-III had defined comprehensive knowledge if people know: (i). That using a condom and having just one uninfected partner limits the risk of getting AIDS, AND (ii). That a healthy looking person can have AIDS, AND (iii). Reject the two most common

misconceptions about AIDS transmission (transmission by mosquito bites and by sharing food)

Using this definition NFHS has identified 33 percent male (Urban 47 percent, Rural 25 percent) to have comprehensive HIV knowledge.[88] In this study the comprehensive knowledge had shown significant negative correlation {Sperman's rho= (-) 0.107 with two tailed *p* value 0.34} with HIV risk behaviour over last year. (Table not presented). While using this study definition only 22.3 percent of study population (Urban 21.3 percent, Rrural 22.6 percent) had comprehensive knowledge. Though there is clear cut difference in urban and rural difference in comprehensive knowledge as identified by NFHS-III, the study had shown no urban-rural differentiation. But there was statistically significant difference in HIV comprehensive knowledge between migrant (13.1 percent) and non migrant (31.8 percent) in this study. The above facts may be due to fact that all migrations (from rural or urban) were to urban area only. (Table not presented). It is worthwhile to note that NFHS identified low level of comprehensive knowledge among women particularly rural women (11 percent).

Also this study using the NFHS-III definition had identified significant difference in comprehensive knowledge among age groups (15 to 24 years-31.45 percent, 25 to 34years-21.96 percent and 35 to 49-16.17 percent), occupation groups, SLI groups (Low - 12.3 percent, Medium- 10.3 percent and High-28.8 percent) and ever married group (Ever married-19 percent, never married-34.9 percent) . There was no significant difference between castes (General-25.9 percent, OBC-16.1 percent and SC/ST-25.8 percent). It is to be noted that most never married people were of lower age group. Above findings indicated that new generation people were having more comprehensive knowledge than older people. Also it could be indicative of variation of knowledge at individual level in a given context.

4.3 Sexual Partner

Durex Condom Company's '2005 Global Sex Survey' indicates that Indians have the fewest sexual partners (3) in the world and India is one of the least sexually active nation.[90]

4.3.1 Commercial Sexual Partner

The study indicates that there is five time increase in commercial sex practice in comparision to Surat migrant study (2.3 percent migrant worker had visited CSW during last year preceding the study).[41] As per the Orissa BSS 2001 report, mean number of CSP among their clients was 2.5 (2.1 for male migrants workers) during the year preceding the survey.[49] While this study indicated two fold (mean 5.7) increase in CSP partner among clients of CSP than the Orissa BSS 2001. As per study definition, the mean number of CSP among migrants was only1.2. Also the study suggested that there was one and half time increase in multiple CSP than that observed in Orissa BSS 2001. NFHS-III data for the whole nation suggests that five in every 100 men have had 2 or more sexual partners in the past 12 months. This study indicates two fold (8.9 percent, migrant-14.6 percent) higher multiple CSP during last 12 months than that of national finding. This indicated high risk behaviour in Ganjam was more prevalent than the national average.

This also indicated that the practice of CS was concentrated among high risk groups and that this practice is increasing over time. The multiple CSP among the clients of CSW in the study population was alarming.

4.3.2 NR & NC Sexual Partner

Surat migrant study indicates that 13.7 percent migrant worker had NR & NC sexual partner during the last year preceding the study.[41] The same figure for the study population was 14.47 (migrant-20.61) percent. There is striking increase (two and half

times) in NR & NC partner among temporary migrants of this study than male migrant workers in BSS 2001.[49]

4.3.3 Any Non Regular Partner

The number of any non regular female partner was one and half times higher than high risk groups surveyed in 2001. The study also indicated one and half time increase in NR & NC partner among the study population in comparison to male clients of CSP in Orissa BSS 2001.[49]

4.3.4 MSM Partner

In comparison to BSS India 2001, study population had shown less less (4.31 percent) MSM partner. The same figure for Orissa and India was 8.3 and 10.8 percent respectively in India BSS 2001.[48] But the percentage of ever had MSM partner who had sex with MSM during last year was same (47 percent) for both the Study population and Orissa high risk group in BSS. But condom use during last anal sex was quite high (88 percent) in the study population in comparison to nil for Orissa MSM during 2001. This may be due to increased awareness.

4.3.5 Never married and Sexual Partner

This study had shown that 22.2 (migrant 28.2) percent of ever married had sex before their marriage. But those are never married during the study, 29 (migrant 38.9) percent among them have ever had sex. NFHS-III data had shown 12 percent of never married young men have ever had sex. This is less than half of the study figure. NFHS-III also indicated that seven percent never married men had sex during last 12 months preceding the survey. The corresponding figure in the study was 16 percent.

NFHS-III data also suggests that among never married men of age 15-49, 18 percent of those had sex during last 12months have had more than one partner. The corresponding figure in the study was 28 percent. 37 percent of never married young men used a

condom the last time they had sex during NFHS-III study. The corresponding figure in this study was two times higher (69 percent).

4.4 Condom Knowledge and Condom Use

The Indians are the lowest risk takers (21 percent unprotected sex) in the world as per the Durex Condom Company's '2005 Global Sex Survey'.[90]

4.4.1 Condom Knowledge

The knowledge of condom and place of condom availability is slightly higher in the study population than the high risk group surveyed in 2001. The male migrants surveyed in Orissa BSS 2001, had two times less knowledge of condom.[49] Fewer of them knew medicine store as place of condom availability. But the knowledge of condom availability in general stores was quite similar (46 percent) between study population and male migrants surveyed in 2001.

4.4.2 Condom Use

Despite the fact of increase in non regular female partner among the study population, the condom use in last sex with these partners had considerably (at least twice) increased. The study also indicates that the condom use in last sex with CSP was three times higher than condom use with NR & NC partner. The similar pattern was also observed in Orissa BSS 2001.[49] The high use of condom with CSP may be due to fact that the decision for condom use by CSP was high (above 50 percent) than that of a NR & NC partner. The increased awareness among this high risk group also supports the result.[49] The increased use of condom for sexual intercourse with CSP, may be because of increased awareness as indicated by negative correlation of HIV prevention knowledge with HIV risk behaviour. Despite the fact that the condom use during last sex was increased one and half fold, among the study population, the consistent condom use pattern over last one year among temporary migrant population (53.3 percent) was slightly higher than male

migrant workers but still less than the clients of CSP in Orissa BSS 2001. This may be explained by the fact that the clients of CSP were more aware of condom use while the current awareness increased among migrants than male migrant workers of 2001.Similar pattern was observed for NR & NC female partner.

4.5 Alcohol/Drug Use

Sex after alcohol use in the study population was 14.7 percent. The similar figure for Orissa and India was 30.8 percent and 13.3 percent for high risk groups surveyed in 2001.[49] But the Orissa figure was slightly higher than the temporary migrants (23.2 percent). The study did not find any injectible drug use. This finding is in contrast to other evidences suggestive of IDU as a new high risk group.[16,29]

4.6 Age at First Sex

As per the '2005 Global Sex Survey' of Durex, Indians has the highest (19.8 years) age at first sex.[90] This study also pointed out a higher age (23.33 years) at first sex in males In this study, only 2 percent had sex before the age of 18 years, 23 percent people had sex before the age of 21 years and 61 percent had sex before the age of 26 years. The NFHS-III suggests 12 percent male had sex before 18 years and 27 percent male had sex before 24 years. It seems most study population became sexually active after the age of 22 years.

4.7 Summary of Study Findings

Study indicates that

(i) There is increase in risky sexual behaviour in the study population than State and national averages in the past.

(ii) There is increased risky sexual behaviour among the study population than the recent national average (NFHS-III data). The risky sexual behaviour over the last four weeks was seemingly less than the risky behaviour shown during the past 12 months both for migrant and non migrant.

(iii)Migrants had shown more risk behavior than non migrants

(iv)There is increased awareness and condom use among the study population than the state and national figures. There is high use of condom during last sexual act with a CSP, where as very few used consistently condom over the last years.

4.8 Understanding the Results Obtained from the Study

This study captured the sexual risk behaviour over the last year. This cross sectional study also gathered updated knowledge indicators as up to the time of interview. As recent knowledge might not have prevented them from showing HIV risk behaviour in the past, and the decrease in risk behaviour over the last year to last month, may be indicative of ongoing intervention programmes in the district.

Out of 17 ICT centres (Information and Communication Technologies) managed by UNDP in Orissa, 14 ICT are operational in the Ganjam district with an aim to increase health awareness specifically HIV/AIDS among migrants.[42] Another international NGO, LEPRA society, which has shifted its focus to HIV/AIDS is also actively participating in HIV/IDS awareness in South Orissa including Ganjam.[43] ARUNA another NGO is also active in rural Ganjam as evident from NIE 2004 annual report.[81] WHO is also active in Ganjam. This might have resulted above findings in the study.

From the previous section it is obvious that the HIV risk behaviour is contextual. The bivariate stratified analysis clearly suggests that the association between literacy and risk behaviour for migrant was significant than for non migrants. But the literacy and HIV prevention knowledge were also discarded in the final model, indicating that other structural factors like caste, occupation are more important and can modify the effects of literacy or HIV prevention knowledge. The mean age at first sex is higher for migrant than non migrant. So there is a chance to gain more knowledge and experience with advance of age, that might counteract the risk behaviour. The condom use is also high in

the study population. Despite the fact that migrants had shown statistically significant difference in HIV Risk Behaviour in comparison to non migrants, the final logistic model discard it as the predictor of risk behaviour when adjusted for other structural factors. It is important to note that the difference in risk behaviour between migrants and non migrants with respect to CSP was not statistically significant. CSP is treated as more risk than other non regular partner and clients of CSP also had multiple non regular partners. This might be influencing final outcome as the study definition of risk behaviour has given more emphasis on non regular partner.

The above discussion is suggestive of highly contextual risk behaviour.

4.9 Strengths of the study:

a) Even though the temporary migration status was given much emphasis in this study, the number of ever migration information was captured which can tell about trend in the HIV risk behaviour to some extent.

b) All the rural CD Blocks represented in this study. Major urban areas were included in the study, which accounts three fourth urban population of the Ganjam district. So the whole district was represented well in this study.

c) Although this is not a cohort study, the timing of interview was well suited to capture the temporary seasonal migrants as the July-August was monsoon period of Orissa. During this period all agricultural works takes place. So migrant workers return to their home for this purpose. Two third of the migrants had cited cultivation as their reason for home return from last migration.

d) Since the respondents were interviewed near their home at a interviewee selected private place, they felt comfortable to answer the questionnaire.

4.10 Weakness in the study

a) Self reported sexual behaviour and drug use is the major limitation of the study.

b) Though respondents were interviewed privately at their place of convenience, the query about sensitive personal matters and especially use of illicit drugs might have resulted in non response.

c) Behavioural data was collected for last one year and last month only to reduce recall bias. So the change in risk behaviour can't be analyzed over time.

d) The definition of temporary migrant restricts this study to compare with Census migration data and other studies.

e) Lack of biological evidence to validate self reported STDs.

4.11 Implication of the Study:

a) There is high prevalence of HIV risk behaviour among the study population. So there is chance of generalized HIV epidemic in near future in the Ganjam district of Orissa, if this issue would not be addressed in time.

b) The HIV risk behaviour is highly contextual. So there is need for continuous behavioural surveillance on risk behaviour to track the trend in HIV epidemic.

c) AIDS awareness has increased. Still half of the study populations don't have complete HIV preventive knowledge and above two third people don't have comprehensive awareness. Low comprehensive awareness among migrants requires a strategic and innovative change in targeted awareness programme.

d) Age at first sex is lower than age at marriage. Casual sex is also high. As sexual act itself a major risk for acquiring HIV, abstinence education and reduction in sex outside marriage may decrease the chance of getting HIV.

e) Sexually active young adult (20 to 30 years) men had shown more risk behaviour than other age group despite the fact that comprehensive knowledge and HIV

prevention knowledge was higher among new generation young adults below 25 years; there is need for behavioural change through continuous IEC.

f) As adjusted current temporary migrant status is not a risk factor for high HIV risk behaviour, and ever migration status is a risk factor for high HIV risk behaviour, there is need for interventions to reduce HIV risk behaviour among general population apart from targeted interventions.

g) As daily labourer occupational category is becoming a risk factor for the study, and migrant labourer are at higher risk for HIV risk behaviour, provision of employments at home district may be a useful intervention.

h) This study finding is similar to Gelmon et al study which suggested that migration it self is not a risk factor. [70] The sexual behaviour won't change one's established sexual behaviour. So, targeting the migrants and potential migrants at the place of origin (Ganjam) is of paramount importance.

i) Though macro-level structural factors like caste and age are non modifiable other structural (intermediate and individual) factors like occupation, literacy, and multiple partners re modifiable. So, these modifiable independent risk factors should be given priority.

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Chapter V

CONCLUSION

This study indicates that the current temporary migration status itself is not a risk factor. However, difference in occupation, age, castes, multiple regular partners and number of migrations have significant bearing on high-risk behaviour. As the HIV risk behaviour is highly contextual, there is need for continuous regular behavioural surveillance. Further biological evidence is required to validate and specify the problem.

Recommendations

This study insists on

a) ABC approach (Abstinence till having a regular partner, Monogamy-Be faithful and Condom promotion) as the main tool for HIV intervention programme in the district.

b) Maximizing IEC effort for HIV/AIDS awareness through out the district apart from targeted interventions for high risk groups. Targeting young adult may be fruitful to reduce HIV risk behaviour.

c) Inclusion of AIDS awareness curriculum at least in secondary level, to capture young adults and adult education for non students needs priority in HIV prevention programme of the district.

d) Continuous effort is required to change the risk behaviour.

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Annexure: Interview Schedule

Serial No.: __/__/__

Date	..	..	2007

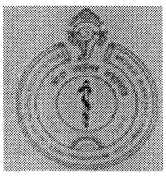
Interview Schedule

for

A Comparative Study of HIV Risk Behaviour Between Adult Male Temporary Migrants and Non-Migrants in the Ganjam District of Orissa.

Investigator
Dr Pratap Kumar Jena

Guide
Dr. P Sankara Sarma



Achutha Menon Centre for Health Science Studies (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST)
Department of Science and Technology (DST),
Govt. of India, Trivandrum, Kerala-695011.
www.sctimst.ac.in

Consent Form in English

Sir,

I am a Master of Public Health (MPH) student. I am pursuing this course at Achutha Menon Centre for Health Science Studies. It is a Government of India institute located at Trivandrum, Kerala. I am undertaking a research project on the HIV Risk Behaviour in the Ganjam District with special reference to temporary adult male migrants for the completion of my MPH course. I will be asking you a few questions for this purpose. This will take around 30 to 40 minutes of your time. I will record your information in the interview format in writing.

Only I will use the information provided by you for the said research purpose and not for any other use. You are free to choose for answering some or most of the questions. Your participation in this study is purely voluntary. If you wish you can withdraw from the interview at any point of time. Your co-operation will add greatly to the scientific knowledge and benefit the society.

If you have any doubt about this study, you are free to contact my Guide, Dr. P Sankara Sarma, Additional Professor at Achutha Menon Centre (SCTIMST, Medical College PO, Trivandrum-695011; Phone No.: 0471-2524232) during working hours.

This is a routine procedure to obtain informed consent from the participant in a study. If you agree to participate in this study, kindly sign on the space provided.

Is the participant willing to sign? (Tick one) YES ☐ NO ☐

The above information is explained to me and I understood the information. I am willing to participate in the study.

Name of the Respondent LTI/Signature of the Respondent

Name and Signature of witness in case of verbal consent----------

Consent of Parents/legal Guardian in case minor respondent: ----------
(The above information will be repeated to them in case of minor respondent)

Date---------- Signature of the Interviewer ----------

Investigator:
Pratap Kumar Jena, MPH Scholar. Cell: 09387715983; E-mail: drpratap@sctimst.ac.in
Achutha Menon Centre for Health Science Studies (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST)
Trivandrum, Kerala-695011. www.sctimst.ac.in

A Comparative Study of HIV Risk Behaviour Between Adult Male Temporary Migrants and Non-migrants in Ganjam District of Orissa.							
Q. No	**Section 1: General Information**						Don't Know /No answer
101	Age	(in completed years)					
102	Residence	RURAL		URBAN		SLUM	
103	Literacy Level	Illiterate		Primary		Secondary	
		Graduate		Higher			
104	Caste	General	SC	ST		OBC	
105	Religion	Hindu	Christian	Muslim		Other	
106	Language Known	Oriya	Telgu		Hindi		
		English	Other--------				
107	Occupation	Farmer	Daily wage labourer		Trader		
		Student	Govt. Employee		Pvt. Employee		
		Driver	Rikshaw puller		Other		

108. **Standard of Living Index (SLI)**

Facility	Types	Value	Score
House	Pucca	4	
	Semi Pucca	2	
	Kutcha	0	
Toilet	Own flush	4	
	Shared or public flush/Own pit	2	
	Shared or public pit	1	
	No facility	0	
Source of lighting	Electricity	2	
	Kerosene, gas, oil,	1	
	Other	0	
Main cooking fuel	Electricity/LPG/Biogas	2	
	Coal/charcoal/kerosene	1	
	Other	0	
Drinking water source	Pipe/ own tube well or well	2	
	Public tap/tube well/well	1	
	Other	0	
Separate room for cooking	Yes	1	
	No	0	

House ownership	Yes	2	
	No	0	
Agricultural ownership	> 5 acre	4	
	2 – 4.9 acre	3	
	< 2 acre	2	
	No land	0	
Irrigated land ownership	Some	2	
	No	0	
Livestock ownership	Cattle	4	
	Goat/sheep	3	
	Poultry	2	
	No	0	
Ownership of durable goods	Car	4	
	Tractor	4	
	Moped/scooter/motor cycle	3	
	Telephone	3	
	Refrigerator	3	
	Colour TV	3	
	Bicycle	2	
	Electric fan	2	
	Radio/transistor	2	
	Sewing machine	2	
	Black and white TV	2	
	Water pump	2	
	Bullock cart	2	
	Thresher	2	
	Mattress	1	
	Pressure cooker	1	
	Chair	1	
	Cot/bed	1	
	Table	1	
	Watch	1	
Total: 0-14=LOW; 15-24=MEDIUM; 25-67=HIGH			

Q. No	**Section 2. Information on Migration**		Don't Know /No answer
201	How long have you lived here in?	No. of Years	
		(Months if <1year).....(0)	

202	Where is your birthplace?				Name of District.....				
					Ganjam	Outside Ganjam	Outside Orissa		
203	Is your birthplace different from the current residence?				Yes		No		
204	Have you ever been away from your home for more than two months altogether?				Yes		No →**Q.211**		
205	Times migrated	Type of migration					Migrated to		
		Intra-District	Interdistrict	Interstate			City	Rural	
206	In the last 12 months have you been away from Ganjam district to any other parts of Orissa or India for at least two months altogether?				Yes		No →**Q.211**		
207	Please mention about your last 3 such incidences of staying outside								
Sl. No.	Name of Places	Types of migration		Duration of migration (in months)	Home Visit (in a year)		Av. monthly Income (INR)	Date of stay If any	
		Inter-dist. Internal	R-R R-U U-R U-U	3-12 13-60 >60	Once or twice or more				
1									
2									
3									
R=Rural, U=Urban, dist=District									
208	Reasons for such travel and staying outside-	To earn more money		To repay loans)		Un-Employment			
		Visit to friends/ Relatives		Influenced by friends/ Relatives		For exposure/ curiosity			
		Family pressure		Study		Others			
209	With whom you traveled that time?	Alone		Friends		Wife			
		Other female		Family member other than wife		Others but not friends			
210	Why you came back?	No reason		Festive occasion					
		Agricultural work		Health problem					
		Other							

211	Are you planning to travel in the next 1 year?	Yes		No →**Q 301**		
212	Where are you planning to go?	Name the place-------				
		Intradist	Interdist.	Internal	Foreign	
		R-R	R-U	U-R	U-U	
213	Why are you planning to go?	To earn more money	To repay loans	UnEmployment		
		Visit to friends/ Relatives	Influenced by friends/ Relatives	For exposure/ curiosity		
		Family pressure	Study	Others		

Q. No.	Section 3. Marriage; Sexual Behaviour; and Knowledge of Condom & its Use			Don't Know / No answer
301	Have you ever been married?	Yes	No →**Q.303**	
302	How old were you when you first married?	..... (Age in completed years)		
303	Current Marital status of the respondent	Currently married, living with spouse	Currently married, living with other sexual partner	
		Currently married, not living with spouse or any other sexual partner	Not married, living with sexual partner	
		Not married, not living with sexual partner **(Check Q 305)**		
304	Do you have more than one wife alive?	Yes	No	
305	Have you ever had vaginal sexual intercourse?	Yes	No →**Q.310**	
306	At what age did you first have sexual intercourse?	Age in completed years ------		
307	Have you had vaginal sexual intercourse in the last 12 months?	Yes	No	
308	Please mention the number of female sexual partners you've had in the last 12 months?	*Regular:* Spouse(s)/live-in sexual partners	.....	
		Commercial: Sex in exchange for money	....	
		NonRegular&NonCommercial: Not married to and have never lived with and did not pay	....	

309	Sexual practice with different partners during past 12 months and condom use	**Regular**	**Commercial**	**NR & NC**	
(a)	How many times did you have sexual intercourse with your most recent sexual partner over the last 4 weeks days?	-------	--------	--------	
	NB. Before proceeding to Q 309(b) Q. 314 should be asked				
(b)	Did you and your partner use a condom when you had sex with this partner last time?	Yes No **(Check Q 314)**	Yes No **If No→309(d)**	Yes No	
(c)	Who suggested condom (NIRODH) that time? *(R=Respondent, P=Partner, B=Both)*	R(1) P(2) B(3)	R(1) P(2) B(3)	R(1) P(2) B(3)	
(d)	Why didn't you and your partner use a condom (NIRODH) that time? Nirodh is a free supplied condom through HFW, Govt of India.	Not available Too expensive Partner objected Don't like them Used other contraceptive Didn't think it was necessary Other Reason	Not available Too expensive Partner objected Don't like them Used other contraceptive Didn't think it was necessary Other Reason	Not available Too expensive Partner objected Don't like them Used other contraceptive Didn't think it was necessary Other Reason	
(e)	How often did you use a condom (NIRODH) during the past 12 months?	Every time Almost every time Sometimes Never	Every time Almost every time Sometimes Never	Every time Almost every time Sometimes Never	
310	Can you tell me other forms of sexual intercourse?		Anal If don't know →**Q.314**	Oral	
311	Have you ever had anal sexual intercourse?		Yes	No →**Q.314**	
312	Have you had anal sex in the past 12 months?		Yes	No →**314**	
313	How many male partners have you had anal intercourse during the last 4 weeks?		----------		
314	Have you ever *heard* of a male condom (NIRODH) ?		Yes	No	

315	Do you know of any place or person from which you can obtain male condoms (NIRODH)?	Yes	No	
316	Have you used a male condom (NIRODH) during last anal sex?	Yes	No	
317	Condom use pattern during last 12 months with a male partner	Every time	Almost every time	
		Sometimes	Never	

NB. Picture or sample of condom (NIRODH) to be shown
Explanation: condoms are rubber objects that a man puts on his penis before sex

318	Do you know any place, from where you can obtain male condoms (NIRODH)?	Never	Bar/Guest House/Hotel	
		Medicine Store	Hospital	
		General Store	Diagnostic Centres	
		NGO	Other .. …..	
319	Do you know any person, who can provide you male condoms (NIRODH)?	Health Worker	Peer educator	
		Friend	Other----------	
320	How long would it take you to obtain a male condom (NIRODH) close to your house or to where you work?	<1 hour		
		1 hour to 1 day		
		More than 1 day		

Q. No.	Section 4.STD/HIV related Knowledge						Don't Know / No answer
401	Have you ever heard of diseases that can be transmitted through sexual intercourse?	Yes		No			
402	Can you describe any symptoms of STDs in women? (Tick against each item if applicable)	Abdominal pain		Swelling in groin Area			
		Genital discharge		Foul smelling discharge			
		Genital ulcers/sores		Itching of Genitalia			
		Others-------					
403	Can you describe any symptoms of STDs in men? (Tick against each item if applicable)	Genital discharge		Swelling in groin Area			
		Burning pain on urination		Itching of Genitalia			
		Genital ulcers/sores		Others---			
404	Have you had a genital discharge during the past 12 months?	Yes		No			
405	Have you had a genital ulcer/sore during the past 12 months?	Yes		No			

406	Have you ever heard of HIV or the disease called AIDS?	Yes	No	
407	Do you know anyone who is infected with HIV or who has died of AIDS?	Yes	No	
408	Do you have a close relative who is infected with HIV or has died of AIDS?	Yes	No	
409	Do you have a close friend who is infected with HIV or has died of AIDS?	Yes	No	
	Now I will tell you some facts about HIV/AIDS. I would like to know whether you are agreeing with these facts or not.			
410	Correct use of condom (NIRODH) during sexual act can prevent HIV transmission.	Agree	Disagree	
		CHECK Q 314 And Repeat Q315-16		
411	Mosquito can transmit HIV virus.	Agree	Disagree	
412	Having a single faithful and uninfected sexual partner can protect people from acquiring HIV virus.	Agree	Disagree	
413	Abstaining from sexual intercourse can protect people from HIV infection.	Agree	Disagree	
414	Sharing a meal with a HIV infected person can transmit HIV.	Agree	Disagree	
415	Sharing a needle can transmit HIV.	Agree	Disagree	
416	HIV infected people looks healthy.	Agree	Disagree	
417	A HIV infected pregnant woman can transmit the virus to her unborn child.	Agree	Disagree	
418	Medicines (ART) can reduce the risk of HIV transmission from a HIV infected pregnant woman to her unborn child.	Agree	Disagree	
419	Breastfeeding by a HIV infected mother can transmit HIV virus.	Agree	Disagree	
420	Confidential HIV testing is possible.	Agree	Disagree	
Confidential means that no one will know the result if you don't want them to know it.				

Q. No.	**Section 5. Drug Use**				Don't Know/ No answer
501	Have you ever used any substances containing tobacco over last 12 months?	Yes	No		
502	Please name the substances? (Tick against each item if applicable)	Bidi	Cigarette	Kada Pana	
		Khaini	Gutka	Nasa	
		Gudaku	Other		
503	Do you ever taken drinks containing alcohol?	Yes	No		
504	Do you ever taken drinks containing	Yes	No		

	alcohol during last 12 months?				
505	During the last 4 weeks how often have you had drinks containing alcohol? Would you say.....		Less than once in a week	At least once in a week	
			Every day	never	
506	Some people have tried a range of different types of drugs. Which of the following, if any, have you tried?				
	Use of different Drugs	Ever User (used in last 12 months)	Current User (used in last 4 week)	Never	
Different Herbal Drugs	Ganja				
	Bhang				
	Opium				
	Chares				
	Chares oil				
	Dhatura				
Different chemical Drugs	Sleeping tablets				
	Codeine/Cough syrup				
	Methadone				
	Brown sugar				
	Smack				
	Heroin				
	Cocaine				
	Other --------				

507	Some people have tried injecting drugs using a syringe. Have you injected drugs in the last 12 months?	Yes	No →**Q.509**

Drugs injected for medical purposes or treatment of an illness do not count

508	Name the IV Drug used.			
509	Do you use others or previously used syringe?	Yes	No	
510	Do you know any person using IVD is HIV positive or having AIDS?	Yes	No	
		Check Q406,Q407 & Q415		
511	Do you feel to have sex after any of the above drug use?	Yes	No **Stop Questioning**	
512	With whom?	Regular	Commercial	
		NR & NC	Male Partner **Check Q311**	
513	Have you ever used condom (NIRODH) for sex after taking any of the above drugs?	Yes	No	
514	What was the frequency of condom (NIRODH) use?	Every time	Sometimes	
		Almost every time	Never	
515	What was the reason for not using the condom (NIRODH)?	Can't think of that	Other	

Thank You

Reference for Interview Schedule:

The contents of the interview schedule are prepared from the following sources with required modifications as per local context to meet the study objectives.

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