CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the context of the study, problem statement, rationale, objectives, hypothesis, research design and conceptual map of the study. The scope of the study, the limitations and strengths of the research study and ethical considerations are also discussed in the chapter.

3.1 Context of the study

The last few decades have seen a phenomenal increase in the development of the economic base, with growing private sector activities related to wholesale trading and processing of agricultural produce in Navi Mumbai. Maharashtra is a national highway route and Navi Mumbai, known as the planned city was designed to decongest Mumbai city and provide alternate space for the residential as well as commercial activities. As a planned city, areas are demarcated and reserved for specific purposes by the City and Industrial Development Corporation of Maharashtra Ltd. (C.I.D.C.O) for appropriate commercial and trade establishments. One such commercial establishment is the Agricultural Produce Marketing Corporation (hereafter referred to as APMC market) at Vashi. Established in 1993 by the State government of Maharashtra, it is a centralized facility for marketing agricultural produce, foodgrains, vegetables, fruits, oil and is one of the largest and cheapest wholesale markets. The produce i.e. grain, rice, wheat, fruit,
vegetable, oil etc are brought in from different parts of the country to APMC market and distributed to Mumbai, Navi Mumbai and surrounding districts.

The bridge population i.e. Truck drivers and Mathadi workers are the core occupational groups in this area. The produce is brought to the market by the long distance truck drivers and the loading, unloading, stacking, carry-in, weighing, measuring or such work including preparatory or incidental to such operations is done by the Mathadi workers. The geographical context of the study are the APMC market (covering Grain market, Masala Market, Onion and potato market) and the truck terminus behind APMC market where the two subgroups of Mathadi workers and truck drivers are located respectively.

**Agricultural Produce Marketing Corporation (APMC)**

The APMC market at Vashi consisting of 160 HA area has four markets – Onion and Potato Market, Fruit and Vegetable Market, Commodity market and lastly the Grain, rice and Oilseed market. The growing population of Mumbai and Navi Mumbai led to the development of a centralized facility for marketing of the agricultural produce, vegetables, fruits, milk products within the twin cities as well as surrounding regions. Though it is a wholesale market, one can see general public purchasing goods in bulk for household and commercial purposes.

The study site i.e. the Onion and Potato market, Masala Market and Grain market is neatly segregated into four to five lanes with an ‘in gate’ (entry) and an ‘out gate’ (exit). The produce is unloaded at the back entrance of the godowns which is equipped with weighing machines and on the front side are the shops managed by the traders. The trucks after unloading are parked at the truck terminus behind the APMC market. With a new
consignment, the truck is assigned to transport further goods from Vashi to different parts of India. There are commercial banks, restaurants, A.T.M facilities, dhabhas, tea stalls within the premises. There is a small temple where devotees, both workers and traders, and the general public come to offer prayers. Festivals such as Holi, Diwali, Makar Sankranti are celebrated within the market.

Each godown/shop employ Mathadi workers (head porters) for loading, unloading, stacking, carrying, weighing, measuring or such other work. The Mathadi workers are registered under the Grocery Markets & Shops Board constituted in 1968. Currently in the Onion and Potato, Masala and Grain Market, there are 7000 active Mathadi workers. The workers operate in groups called ‘tolis’ and each group is headed by a leader called ‘Mukadam’. At present there are 232 ‘tolis’. The group strength varies from 10 – 50 members.

**Truck Terminus**

As a huge number of commercial vehicles is needed to transport the produce, the truck terminus with area of 8.5 hectares has been provided at Sector 19, Vashi. It is located on the eastern side of nodal expressway (Palm Beach Marg) which connects the Thane Belapur Road on the north and the Sion Panvel Expressway on the south. The capacity of the terminus is around 1000 trucks at a time and is being operated on “Pay and Park System”. The terminus is cemented and maintained by Yash Marketing and Trading Company. The trucks enter the terminus through the ‘in gate’ and exit from the ‘out gate’ both of which are manned by attendants. There are 14 lanes along which the trucks are parked. There is a dhabha and a recreational room for the truck drivers within the terminus. Other amenities such as transit godowns, repair shops, garages, restaurants,
petrol pumps, washing bays are provided. The offices of the truck companies are located just outside the terminus where the trucker drivers conduct their official transactions.

Along the 14 lanes, the trucks are parked according to the state where they have come from. The truck from Gujarat, Karnataka, Maharashtra are parked in close proximity to each other. As the lanes proceeds further down the terminus, one can observe trucks from other parts of the country parked. The drivers carry basic cooking utensils for making tea and snack items. Pots and small pans can be seen hanging from the trucks. During their stops at midpoints they prefer making tea and snacks with small kerosene stoves they carry with them. Many drivers prefer to have tea and have their meals in the truck itself. The drivers sleep and prefer to have their rest during the daytime in the truck itself. Their major source of entertainment is listening to music as most of the drivers possess small transistors and they also like to read newspapers, magazines, preferably in their own language. During the daytime, the drivers conduct their official transactions in the company offices located outside the terminus. The recreational facilities frequented by the drivers are the cinema theatres and video parlors, restaurants and bars in Vashi and nearby area. One can observe groups of drivers from the same state sitting in groups and having tea and chatting with each other.
Figure 3.1 Map of the APMC market and Truck terminus

Source: maps.google.co.in
3.2 Statement of problem is awareness of HIV/AIDS among the mathadi workers and truck drivers in Mumbai: A comparative study

At the start of the epidemic i.e. in 1980s and early 1990s the focus of the HIV/AIDS intervention programs were the ‘high risk’ groups of female sex workers, injecting drug users and homosexuals groups. The surveillance data showed high rates of HIV infection among these groups and thus these groups became the foci of intervention programmes. In the late 1990s the data showed an increasing incidence of HIV infection among the general population i.e. women coming for antenatal care who represented the general population. It was increasingly recognized that the ‘bridge population’ is the medium through which infection is being transmitted from high risk groups to the general population who otherwise do not engage in risk behavior. Gradually in the second phase of the epidemic, the bridge population i.e. the group that may be the clients of female sex workers came to the forefront as loci of interventions.

The two study groups i.e. truck drivers and mathadi workers who form the main nucleus of the work force at the APMC market are two such bridge populations. The two study groups are a part of highly productive and sexually active age group i.e. between 18-45 years. These two groups are away from their place of origin and relocated at the place of destination i.e. Vashi for reasons of higher economic prospects. The nature of their work is such that they are highly mobile – going to and fro from Vashi to their place of origin and back.
Away from their families at the place of destination that constitutes a different social sphere with an entirely varied set of norms of living, they may engage in behavior which otherwise they may not in their place of origin. A unique social world is created at the place of destination characterized by a different set of cultural norms, a certain permissive behavior towards sexual activity and promiscuity. At the place of destination, these two groups may engage in high risk behavior in which they may not engage in their home environment. They may become part of the sexual network at the place of destination. There is an easy availability of sexual partners – both paid i.e. female and male sex workers and non-paid partners referred to as ‘regular partners’ who may be women who may be working in the galas, terminus and nearby areas. Since the latter group does not engage in sexual activity solely for commercial interest, they may be perceived as morally upright persons and hence non-carriers of infection. Condom use with such partners may be nonexistent or inconsistent. Thus the risk behavior may convert the susceptibility of the groups to actual risk of infection.

The long working hours and intense labor tires them physically. The recreational facilities available range from numerous bars and drinking spots in and around Vashi to cinema theaters and video parlors. Being away from their families, a main support system in the Indian culture, the men may resort to visiting bars and, engage in high risk sexual activities. These activities may be viewed as a mechanism for relieving the stressors of their daily life.

Engaging in extra-marital relations, having multiple partners and alcohol consumption are seen as behaviors that are acceptable. Furthermore they conform to the image of the Indian masculine male. Gilmore (1990) studied masculinity and found it to be an
achieved status which almost universally includes toughness, aggressiveness, stoicism and sexuality. Courtenay, (2000) supports this finding and opines that masculinity is a collective gender identity, one that is fluid and socially constructed, rather than a natural attribute. McCreary et al. (1996) report that perceived inability to meet cultural benchmarks of normative masculinity may result in anxiety, depression and hostility.

Members of the family, such as spouse, may also accept the risk behaviors as something that is ‘natural’ and conforming to the notions of the patriarchal society. In a patriarchal society women recognize and accept the presence of multiple partners in defining masculinity. There may not be an open hostility or confrontation, though research studies have shown that women have expressed ambivalence and anger about this practice, in the light of HIV/AIDS epidemic (Sorrell & Raffaelli, 2005).

Factors such as peer influence, absence of alternate entertainment sources, hidden homosexuality, and limited health services in case of illness render these groups highly vulnerable in the context of HIV/AIDS.

A vulnerable person may or may not become infected with HIV depending on his/her behavior and the environment which may or may not facilitate safer behavior practices. Research studies reiterate that not all bridge population are at equal risk but men who are part of sexual network at the place of destination are at highly vulnerable to the epidemic. Moreover, these groups may not see their behavior as being a risk factor to their health status. The moral connotations attached to the epidemic of HIV/AIDS offers blanket coverage to the group that is part of a respectable middle class section of the society. There is a strong underlying belief among this section that they cannot contract the
infection; it is others who get the infection, not themselves. They do not see their behaviors translating into risk factors in the context of HIV/AIDS. Studies on risk perception have shown that personal risks are judged as smaller than general risk. Weinstein (1984) has termed this as ‘unrealistic optimism’. The personal risks are viewed as very small and minor risks that can be dismissed or ignored. Gender also plays an important role in the risk perception where women perceive risks to be larger than men do.

In many cases the bridge population may not be even aware of their HIV status and may act as bridging population carrying the infection to their partners back at their place of origin. Their married partners who may be in an otherwise monogamous relationship are placed in a vulnerable position in terms of getting infected through their husbands. This in turn may place children also in a vulnerable position. Research studies have shown a strong connectivity with the place of origin among the mobile population. There may be frequent trips to and fro the place of destination and the place of origin. This circulation of people forms complex networks of continuous between origin and destination that may serve as pathways for not only passage of money but also of infection.

Awareness regarding HIV modes of transmission, prevention of infection and safer behavior practices may be superficial among these population groups. Health concerns such as sexually transmitted infections (STI) and inadequate treatment for the same creates further grounds for vulnerability to HIV infection among these groups. Though there are health care providers in the form of governmental and non-governmental agencies at the place of origin, these subgroups may encounter difficulties in accessing the services due to their mobility status.
Three factors influence an individual’s risk of contracting HIV infection - cognitive, attitudinal and behavioral. Cognitive factors relate to how and what individuals know about sex and sexuality, and their ability to identify risk and understand information vital to risk reduction. Attitudinal factors include people's feelings about situations, others and themselves. Behavioral factors are those that emerge from the cognitive and attitudinal i.e. how people act and what they do in the light of what they know and feel. The behavioral aspect of individual risk also includes the skills of individuals regarding HIV risk and risk reduction, such as the ability to use condoms consistently and correctly and/or to negotiate their use with a sexual partner (UNAIDS 1999).

The two study groups of Truck drivers and Mathadi workers are highly vulnerable to the HIV/AIDS epidemic. HIV Sentinel surveillance & HIV Estimation in India, 2007 reports HIV seropositive rate among truck drivers is 2.51 percent and 3.61 percent among the migrant workers. The two groups located at the same geographical site may be thrust into situation of vulnerability and may engage in high risk behavior. While studies on the sub group of truck drivers are quite evident from the literature review, there are very limited studies on Mathadi workers. Though the two groups work in close association, there may be similarities and dissimilarities in terms of risk behavior, safer behavior practices and risk perception. A comparative research study of the two groups may bring out similarities and differences in the above mentioned variables.

3.3 Rationale of the study

The researcher has worked in the field of HIV/AIDS with Population International Services, an NGO at Vashi, Navi Mumbai. She has worked in APMC market and truck
terminus. Over a period of five years, she has interacted with truck drivers and mathadi workers in the mobile Voluntary Counseling and Testing Centre and clinic at APMC market. This experience has led to discussion with the two groups on issues of awareness, risk behavior and risk perception of the client groups and behavior change. One incident that stands out in her memory is that of a client testing positive and coming back to the clinic after a year for care and support services. His CD 4 level was quite low and he was suffering from opportunistic infections. This brought up certain pertinent questions in the mind of the researcher.

The truck drivers and migrant workers are a major ‘bridge population’. They are a crucial group because of their ‘mobility with HIV’. Their living conditions, sexually active age and separation from regular partners for an extended period of time predispose them to paid sex or sex with non regular partners. Further, lack of access to sexually transmitted infections aggravates the risk position (NACO 2007). [1]

“Being mobile in and of itself is not a risk factor for HIV/AIDS; it is the situations encountered and the behaviors engaged in during mobility or migration that increases vulnerability and risk regarding HIV/AIDS” (UNAIDS Technical Update 2001). During the process of mobility, right from the transit to the arrival and stay at the place of destination and frequent return journeys to the place of origin creates various grounds for increased vulnerabilities for these groups. These groups may be highly marginalized at the place of destination in terms of access to health facilities, cultural and linguistic barriers, cultural shock, peer pressure to name a few. Despite huge awareness campaigns and targeted interventions by both governmental and non governmental agencies, these groups continue to engage in high risk behavior and are placed in a very vulnerable
position. Statewise mapping of High Risk groups of AIDS in India in November 2004 included the groups of truck drivers and migrant workers along with FSWs, IDUs, MSM, street children and Eunuchs as high risk groups (G.O.I Lok Sabha 2004).

Despite mass awareness campaigns knowledge regarding HIV/AIDS remains superficial and misconceptions are highly prevalent. According to Adegbola, et al. (1995) knowledge essentially is the recall recognition of specific and universal elements in a subject area. In the context of HIV/AIDS, having knowledge implies ability to recall facts concerning causes, transmission, prevention, concerning HIV/AIDS. It is expected that when one has the knowledge of HIV/AIDS, the accompanying behavior would be logical i.e. people will be motivated to practice safer behavior practices. The environment of denial and fear would be replaced by ability to take informed decisions regarding behavior modifications.

National Family Health Survey (NFHS-3) states that persons have comprehensive knowledge if they know:

- That using a condom and having just one uninfected partner limits the risk of getting AIDS
- That a healthy looking person can have AIDS
- Reject the two most common misconceptions about AIDS transmission (transmission by mosquito bites and by sharing food).

The assumption here is that knowledge is an important indicator that will impact vulnerability of population groups to HIV infection. For future intervention or otherwise programmatic response to the epidemic would entail measurement of the knowledge of
HIV/AIDS among these vulnerable groups. National surveys such as NFHS -3 (2005-06) have brought out this aspect and have presented data on knowledge level among the general population. It reports that nationwide only 17 percent of women and 33 percent of men have comprehensive knowledge of HIV/AIDS. Misconceptions about the disease are common. A much higher HIV prevalence rates are found among men who have more lifetime sexual partners and among men who visit female sex workers.

In the National AIDS Control Program III (2007-2012), National AIDS Control Organization (NACO) is considering incorporating the bridge population of truck drivers and migrant workers in the programme priorities and thrust area. (NACO, Annual Report 2009-2010). Thus there seems to be a growing recognition that these groups are in need of workplace interventions for appropriate behavior changes. Out of a total of 475 Targeted interventions (TI) under NACP, the data shows 75 interventions for truck drivers and 129 for migrant workers. In the state of Mumbai, out of a total of 23 TI, 4 interventions for truck drivers and 2 for migrant workers (G.O.I statistics released by Rajya Sabha, 2001)

Though the bridge population is seen as a highly vulnerable group, there is not sufficient data on these groups in terms of knowledge level, misconception regarding the illness and other behavior practices. It is important to study the knowledge and beliefs about HIV/AIDS as it will affect the way people living with HIV/AIDS will be treated in the society. Correct information and knowledge will equip people to fight against stigma and discrimination associated with this epidemic and encourages safer behavior practices.
Going beyond the quantitative aspect of knowledge and behavior practices, the concept of risk perception also plays an important role in behavior changes as studies have shown that risk perception is the first step to behavior changes. The association between perception of risk of HIV infection and sexual behavior remains poorly understood. Perception and management of risk are constructed within a socio cultural matrix where individuals shape their behavior, make choices and manage their risks. Studies by Nzioka 2001; Aggleton et al. 1994; Ingham & Van Zessen 1997; Becker & Joseph 1988 show that individuals are more likely to underestimate than to overestimate their risk of HIV infection regardless of the nature of their sexual behavior. While lack of information may lead to making uninformed decisions, perception of risk may be influenced by whether they feel they are in control of the perceived risk. While even crossing a street without careful consideration of traffic may be seen as a risk factor, the concept of risk is seen as inherent in the daily life. Risk perception is the subjective assessment of the probability of a specified type of accident happening and how concerned men are with the consequences. To perceive risk includes evaluations of the probability as well as the consequences of a negative outcome.

Despite the growing shift in the epidemic towards younger and rural population, and despite migration and mobility being identified as significant socio-demographic processes, in explaining the spread of the epidemic (UNAIDS, 2002), studies on bridge population have been few and far between. Among the groups with high risk behavior study coverage is highly unequal. A database study by Tata Institute of Social Sciences corroborates that study on female sex workers has been maximum (38.7 percent), truck drivers (23.7 percent) while migrant workers constitute only 3.2 percent of research studies. There are a large number of ‘floating’ documents generally produced by NGOs
working in the area of HIV/AIDS but they are also difficult to access. Another major concern is that these documents are meant for circulation among the communities where the NGOs are working and hence there is no academic rigor.

An academic study on this aspect is important to theorize the concepts of vulnerability and risk behavior and the perception of the highly vulnerable bridge population. This study is seen as contributing towards an academic study of the above mentioned concepts. In addition, it could also guide programmatic responses in terms of identification of correct knowledge level, behavior patterns, safer behavior practices, risk perception. Profiling and comparing the two groups would help in identifying similarities and differences between the groups in terms of the above mentioned variables.

3.4 Purpose of the study

While vulnerability can result from personal, programmatic and societal factors, the researcher’s interest lies in focusing on the vulnerabilities arising from various factors in an individual’s environment that makes him more prone to the epidemic i.e. personal vulnerability to HIV/AIDS. The concepts of individual risk and societal vulnerability are inextricably intertwined. The societal context of vulnerability includes the individual—whose behaviors, experience, knowledge are the focus of HIV/AIDS programmes since it is groups of individuals who make up societies. The personal vulnerability factors would be:

i. knowledge and awareness level – correct information on modes of transmission and prevention, myths and misconceptions regarding HIV and STI
ii. Behavior characteristics that creates susceptibility to infection – are the groups engaging in high risk behavior and the risk perception of the two study groups

iii. Life skills to deal with high risk situation at the destination point and social relations – safer behavior practices

A study of awareness and knowledge level will include within its scope the concept of risk perception as attempts at understanding behavior would require a contextual understanding i.e. focus on the behaviors deemed as risk behaviors from the perspective of the bridge population. The risk behaviors as we understand may be inherent within the group, something they see and observe as natural or consistent with their group norms. It is important to understand risk behavior as they see and view it and the next logical step would be to see whether they consider the behavior to be a risk factor increasing their vulnerability to HIV/AIDS. In addition to numerical quantitative data, the researcher aims to bring out gain inputs from the bridge population in terms of how they perceive the risk behaviors, factors contributing to the same, communication regarding this infection in their peer groups and family. Questions of a sensitive nature particularly the sexual behavior which is a much closed arena in the Indian context may evoke feelings of being judged or bring out moral connotations of ‘right or wrong’ behaviors. More realistic and relevant information would contribute and substantiate the findings from the quantitative data. Qualitative data using Focus Group Discussions is collected in the second phase of the study.
“Substantive problems must thus be translated into the vocabulary of social enquiry..... Working out a way of thinking through the choices and some appropriate sequence of tasks will allow you to answer a research question.”

Robert Alfort, The craft of Inquiry [2]

Triangulation defined as the idea that looking at something from multiple points of view improves accuracy (Neuman. L.W, 2006). The advantage of triangulation method i.e mixing quantitative and qualitative style of research and data will provide a fuller and more comprehensive study of phenomenon. Various scholars like Greene (1989), Dressler (1991) have used mixed method. Such methods seek to corroborate the results obtained from different sources of data collection and bring out paradoxes and contradictions and a new perspective of understanding. It extends the breadth and range of inquiry by using different methods for different inquiry components.

The overall purpose of this two phased mixed method research study is to learn about HIV/AIDS awareness, behavior practices and risk perception among the bridge population of Truck drivers and Mathadi workers and a comparison of these variables among the two study groups. The first phase of the study is a quantitative exploration of awareness, behavior practices and risk perception by collecting quantitative data through interview schedule from the Mathadi workers and Truck drivers at APMC market and the truck terminus, Vashi respectively. The reason for collecting quantitative data is to gather information about personal vulnerability of the two groups at a given point of time. The data gathered seeks to present a detailed accurate picture of the vulnerability factors within the context of mobility of the two study groups. ‘What’ is the awareness level regarding HIV mode of transmission, prevention; ‘How’ the groups are vulnerable to HIV/AIDS and ‘who’ are the actors involved in this creation of vulnerability.
In the second phase of the study, the researcher through the use of Focus group discussions (FGD) gathered information on the two study groups opinions and views regarding risk behavior and risk perception, communication regarding the same and health care options available to the groups at the place of destination. Initially FGD has been used widely in market research in USA in to gather information on market products. The FGD method is a form of group interview in which ; there are several participants; there is an emphasis in the questioning on a fairly tightly defined topic; and the accent is upon the interaction within the group and the joint construction of meaning (Bryman, A 2008). [3]

The reason for the second phase of study is to substantiate information gathered through the Quantitative study and understand the awareness levels, behaviors and risk perception in the context of mobility and not dismiss the beliefs of the respondents as irrational or ignorant. The behavior of the groups of Mathadi workers and Truck drivers has to be understood in the context of their daily life, their opinion regarding behavior practices, attitudes to safer practices and interactions and relations that are important to them and the meaning that the behaviors has for them. Information collected through this methodology would help to fill in gaps and substantiate quantitative data and also capture nuances of risk behavior and perception.

The FGDs were conducted to gather information from the respondents about their views and opinions regarding four major broad areas - Risk perception of HIV/AIDS and the factors likely to increase the perception of risk ; communication within family and peer group on HIV/AIDS and the sources of information on HIV/AIDS ; availability of health
care facilities and accessing the same within APMC, Vashi and factors that can create vulnerable conditions for HIV/AIDS among the two study groups at place of work i.e. APMC market and the Truck terminus. Certain respondents who were vocal and participative in the interview process were selected for the FGDs which were conducted within the premises of Grocery Shops and markets Board office and the truck terminus respectively for the two study groups. Two FGDs were conducted for both the respondent groups and each group had seven to eight participants. In the truck terminus, with the progression of the FGD other drivers also joined the groups but they were requested to be mere observers and not actively participate in the discussions. All the group members were encouraged to present their views and opinion on the topic discussed. Confidentiality was assured to the members that no names would be taken in the report. The sessions were tape recorded and transcripts were prepared for analytical purposes.

3.5 Similarities and differences between the two units of analysis

There are certain similarities and dissimilarities between the two groups – Truck drivers and Mathadi workers.

3.5.1 Similarities

Both the groups have moved away from their place of origin and are staying at the place of destination i.e. Vashi for occupational purposes. Better job opportunities have pulled them to this location.

These groups are occupying a unique social sphere at the place of destination with a new set of norms regarding sexual practices, interactions, past time activities. Both the groups
are engaged in high risk behavior such as visiting bars, alcohol intake, multiple partners etc.

Both the groups are clients of female sex workers and may be carriers of HIV infection back to their place of origin, thus infecting their wives who otherwise may be in a monogamous relationship.

Both the groups are beneficiaries of targeted intervention initiated by NGOs and have been part of awareness programmes/campaigns.

3.5.2 Differences

The truck drivers are a highly mobile population traveling to all parts of India in the course of their work. Vashi is one of their places of destination. On the other hand, the mathadi workers have moved away from their place of origin to only one place of destination (Vashi) for work purposes. Thus the place of destination may be many for the truck drivers and only one particular city i.e. Vashi for the mathadi workers.

The period of stay for the truck drivers may stretch over from few days to few months. In contrast, once the mathadi workers come to Vashi, they may stay there for years till their retirement period.

The truck drivers may make the journey from their place of origin to Vashi a couple of times during the year while the mathadi workers may make more frequent journeys to and fro their place of origin and destination during weekends and holidays.
The truck drivers have a stereotypical image of an aggressive, womanizing, independent individual – Masters of Road (Bronfman M et al. 2002). The mathadi workers on the other hand fall under the stereotypical image of coming from strongly patriarchal, conservative background adhering to normative gender norms.

3.6 Research questions

The questions motivating the researcher to conduct the study are:

1. What is the current awareness regarding HIV/AIDS among the group of truck drivers and mathadi workers?
2. Is it possible to compare the correct scientific knowledge of HIV/AIDS among the two groups? Does this scientific knowledge change with the respondent types?
3. What are the barriers to safer behavior practices?
4. Does condom use send out the message of ‘mistrust’ to the partner?
5. Which factors would motivate behavior changes among the groups and thus reduce vulnerability to HIV/AIDS?
6. What is the association between knowledge level regarding HIV/AIDS and risk behavior among the two groups?
7. Do the two groups perceive themselves to be at risk of HIV infection?
8. What factors affect the personal risk perception of the two groups?
9. Does partner’s risk perception affect respondent’s perception of risk?
10. Is the topic of HIV/AIDS a part of their social communication?
11. Do the two groups differ from each other in terms of knowledge, behavior practices and perceptions, though both the groups come under targeted intervention?
12. Do stereotypical gender norms play a role in behavior practices?
3.7 Objectives of the study

1. To understand the factors that makes the truck drivers and mathadi workers vulnerable to HIV/AIDS epidemic at place of destination.

2. To determine the awareness of HIV/AIDS among the truck drivers and mathadi workers and compare the two study groups.

3. To examine the risk behavior practices of the two study groups in the context of HIV/AIDS and ascertain safer behavior practices.

4. To determine the risk perceptions of the two groups and study the association between knowledge and risk perception of HIV among the study groups.

3.8 Hypotheses

1. The HIV/AIDS knowledge is likely to be higher for the group of Mathadi workers as compared to the group of Truck drivers.

2. Higher level of HIV/AIDS knowledge is likely to result in higher risk perception of HIV.

3. Gender equity norms are likely to influence risk behavior among the two respondent types namely the truck drivers and mathadi workers.
4. Having seen an awareness programme on HIV/AIDS is likely to result in increased risk perception

3.9 Conceptual framework of study

Concept mapping was originally developed by Joseph Novak (Novak & Gowin 1984) as a tool for developing and clarifying theoretical concepts. Over the years, research studies use them as a visual display of the concepts proposed to be studied and the relationships among them. It helps develop relevant and realistic research questions, helps to identify variables, select method for data collection and eventually points out direction for data analysis.

Based on the objectives the conceptual framework of the research study is developed. This framework tries to delve into the various factors that have a correlation with HIV/AIDS vulnerability factors at the place of destination. Personal vulnerability is indicated by knowledge of HIV/AIDS, safer behavior practices and risk perception and these are the dependent variables. Socioeconomic factors such as age, marital status, education, income, risk behaviors, mass media exposure and social network are taken as independent variables and their correlation with personal vulnerability factors is studied. Gender is taken as an intervening variable to study whether it plays a role in influencing risk behavior and safer behavior practices of the respondent groups. Reducing personal vulnerability to HIV/AIDS by increasing knowledge and awareness of HIV/IDS, increasing risk perception to infection and adopting safer behavior practices would lead to sustained behavior changes or modifications that are advocated in the absence of a vaccine or cure for HIV/AIDS.
Figure 3.2 Conceptual Framework of study

[Diagram showing the conceptual framework with push factors (Low wages, Unemployment, Debt, Poverty) and pull factors (Better job opportunities, Higher income) affecting HIV vulnerability through factors such as mobility of bridge population, socio-economic status, and risk behavior.]
3.10 Operational definitions

Operationalization links the concepts of study to a specific set of measurement techniques or procedures. Neuman (2006) defines operational definition as definitions of a variable in terms of the specific actions to measure or indicate it in the empirical world. Such a measure will link abstract ideas to precise measurement procedures to collect data on empirical reality.

**Bridge population** – Bridge population comprises people whose close proximity to high risk groups (FSW, MSM, and IDU) are at risk of contracting HIV. They in turn infect the general population. Often the bridge population is the clientele for sex workers (www.avert.org/hiv-india.htm).

In the study, truck drivers and mathadi workers constitute the bridge population by status of their interdistrict and interstate mobility.

**Truck drivers** – Long distance truck drivers above 18 years of age along transport routes staying away from their place of origin on a regular basis.

**Mathadi workers** – Head loaders registered with The Grocery & Shop Board constituted by state government at APMC market. The minimum period of stay at Vashi is six months.

**Regular partners** – These are partners whom the respondents consider to be exclusive to them. Such partners may include partners at place of destination with whom the
respondents have sexual relations, live in relation or persons they intend to marry. There is no financial transaction involved in such relationships.

**Female Sex workers** – Women involved in sex for a commercial purpose. This is the main source of income for them.

**Vulnerability to HIV/AIDS** - The basis of the term vulnerability comes from the Latin word ‘vulnus’ or wound. Thus vulnerability is the potential for being wounded (www.hivpolicy.org)

Vulnerability results from a range of factors outside the control of an individual that reduces the ability of individuals and communities to avoid HIV risk. These factors may include: (1) lack of knowledge and skills required to protect oneself and others (2) factors pertaining to the quality and coverage of services and (3) societal factors such as human rights violation or social and cultural norms. These factors alone or in combination may create or exacerbate individual and collective vulnerability to HIV (UNAIDS 2007).

In the study, personal vulnerability is indicated by three factors – knowledge and awareness of HIV/AIDS, risk perception to HIV/AIDS and safer behavior practices.

**Awareness of HIV/AIDS** – The study includes a series of questions about whether the respondent has heard of HIV/AIDS, has information on modes of transmission, prevention of HIV infection and condom availability and misconceptions regarding HIV/AIDS.
Knowledge of HIV/AIDS – The study uses HIV Knowledge Questionnaire (HIV-KQ 18; Carrey, Morrison-Beedy, & Johnson, 1997) to assess correct scientific HIV related knowledge. [4]

High knowledge is indicated by correct responses to 13 or more questions, the maximum being 18. Moderate knowledge is indicated by correct responses to 7 or more, the maximum being 12. Low knowledge is indicated by correct responses to one or more, the maximum being 6 questions.

Risk – Risk is defined as the probability or likelihood that a person may become infected with HIV. Certain behaviors create, increase and perpetuate risk. Example – unprotected sex with a partner whose HIV status is unknown, multiple sexual partnerships, injecting drug use with contaminated needles and syringes (UNAIDS 2007). Frequent change of sexual partners, unprotected sexual relations, sex at young age, and poor behavior in seeking treatment for sexually transmitted infections (STI) can be used to indicate risk behavior (Lamptey R.Peter, 2002). [5]

In the study, risk behavior is indicated by age of first sexual exposure, having more than one sex partner (besides wife in case of married respondent), type of partner, condom use, alcohol consumption prior to sexual relation and sexually transmitted infection (STI) in the last six months. The recall period is the last six months.

Safer behavior practices – Behaviors that tend to reduce the likelihood of sexually transmitted infection, e.g. using a condom etc (Campenhoudt Van Luc, Cohen M, Gustavo G, Hausser D. Ed. 1997). [6]
In the study it is measured by indices of condom used in last three sexual relations and STI treatment in case the respondent has suffered from STI in the last six months

**Consistent condom use** – reported use of condom in the last three sexual relations.

**Risk perception** – In studying health and illness, the perception of risk for becoming ill is considered critical in explaining why people engage in health related behavior or what factors motivate them to seek medical care (Prohaska.T et al. 1990).

In the study, risk perception is measure as - no risk, low risk, moderate risk and high risk.

**Social network** – The set of an individual’s social relation (family, professional, social); the network becomes an important source of social control over the individual (Campenhoudt Van Luc, Cohen M, Gustavo G, Hausser D.Ed. 1997).

In the study, social network is indicated by whether the respondent knows a HIV positive person and communication about HIV/AIDS topic in the social circle.

**Stereotypical masculinity** – The patriarchal nature of our society has clearly demarcated masculine and feminine role behaviors. Masculinity is measured through indicators such as aggressiveness, toughness, virility and sexuality. Perceived inability to meet cultural benchmarks of normative masculinity may result in anxiety, depression and hostility (Mc Creart et al 1996). [7]
In the study gender equitable norms are measured by Gender – Equitable Men scale (GEMS). [8] High support for gender equity is indicated by score of 35-51. Moderate support is indicated by scores 18–34, low support by scores 1–17. Higher scores represent higher support for gender equitable norms.

3.11 Research Design

Research Design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Selltiz, 1976). [9] The design provides a framework for collection and analysis of data keeping in mind the objectives and feasibility of the study.

3.11.1 Study Variables

The independent variables are socioeconomic indicators such as age, marital status, number of children, education, income, caste and religion. Other independent variables are behavior practices, mass media exposure, and social network. The mobility indicators are place of origin, period of stay at place of destination, number of times traveled to and fro from place of destination to origin in last two years. Gender equitable norms are taken as an intervening variable to study the correlation between respondent groups and risk behavior.

The dependent variables are knowledge about HIV/AIDS, safer behavior practices and risk perception of HIV/AIDS. Other factors creating vulnerability at place of destination have included in the scope of the study. The recall period for behavior practices was taken as six months and last three sexual relations for condom use.
3.11.2 Sampling unit

Since the study is a comparative one, there are two sampling units. The sampling units for the two study groups are truck drivers at the truck terminus and mathadi tolis at the APMC.

3.11.3 Universe

Since there are two sampling units, there are two universes one for each respondent type. For the truck drivers, the universe is the truck drivers at the truck terminus, Vashi. At a given time, there are approximately 1000 trucks parked in the terminus. For the mathadi workers the universe is the mathadi tolis (group) registered with The Grocery Market & Shop Board, APMC market, Vashi. Currently there are 232 active tolis working in the Onion and Potato market and the Grain market.

3.11.4 Sample size

30 percent of the universe is taken as the sample size for both the sample units. There are 1000 trucks parked at the terminus at a given point of time. 30 percent of 1000 i.e. 300 truck drivers is the sample size. For the group of mathadi workers, out of 70 tolis 300 mathadi workers are selected as the sample for the study. Since it is a comparative study equal proportion of truck drivers and mathadi workers are selected as sample size. Four Focus Group Discussions are conducted in the second phase of study.

3.11.5 Sampling procedure

For truck drivers, that are considered a ‘floating’ population, there is no list or frame available at the truck terminus. Facility based sampling along with time location sampling was used to draw samples. Recruiting samples from hard to reach and ‘hidden’
sub population is crucial to contain HIV epidemic and prevent transmission and this has been elaborated by various scholars such as Magnani, R et al. (2005). [10]. A preliminary mapping exercise of the truck terminus was undertaken. This provided information on the number of lanes, trucks parked row wise distribution, facilities within the terminus and an opportunity to interact with the drivers and to convey the importance of the study. The mapping revealed that there are 14 rows vertical rows where the trucks are parked. Using time location sampling respondents were drawn from the terminus between the time frame 10.00 a.m to 4.00 p.m.

For the mathadi workers, systematic sampling procedure was used to draw sample. The list of toli groups made available by the Grocery Board was used as the sample frame. Using systematic sampling, 70 units (tolis) were selected. The manpower strength of each toli varies from 10 to 50 workers. From each unit respondents were selected to cover the sample size, the number of respondents selected from each toli being proportional to the toli manpower strength.

3.11.6 Study Tools
Primary data was collected through structured Interview schedule containing both close-ended and open-ended questions. The close-ended questions were precoded. Two scales have been used in the interview schedule – one for measuring HIV knowledge (HIV KQ 18) and the second for measuring gender equity (Gender Equitable Men Scale). The internal consistency of the two scales (HIV KQ 18 and GEMS) used in the interview schedule was measured at Cronbach’s alpha of .60 or more. The HIV KQ - 18 has a Cronbach alpha value of .678 while GEMS has a Cronbach alpha of .708 while. Thus both the scales report high internal consistency.
Since the respondent groups are well versed in Hindi and the medium of communication would be Hindi, the interview schedule was translated into Hindi. To ensure the contextual meaning of the questions and the scales remains constant in the Hindi translated form, the interview schedule was back-translated to English language. The schedule was then pre-tested with both the two groups – Truck drivers and Mathadi workers and modifications made. Distinction between married partner and regular partner was made to avoid ambiguity in the study. It was felt that a personalized question regarding condom use, HIV testing would create hesitation on part of the respondents so the questions were framed to seek opinion of the respondents on these issues. In the second phase of the study, Focus group Discussions were conducted to gather information regarding respondents’ views and opinions on vulnerability factors, risk perception and health services accessibility.

Secondary data was collected from books, journal articles available across libraries at SNDT Women’s University and Tata Institute of Social Sciences. Information from NFHS, UNAIDS, NACO reports were used in the study.

3.11.7 Process of data collection

The process of data collection began in April 2010 and continued till October 2010. The researcher first visited the APMC market and contacted the Mathadi Union leaders and Board members of The Grocery Markets & Shops Board for Greater Mumbai. The purpose of the study and the permission letter from the University was shared with them. After seeking their permission, the researcher contacted the toli leaders (Mukadams) and informally sought their permission to interview the mathadi workers.
The researcher being female, the data collection was very challenging. Since she had worked in an NGO, Population Services International (PSI) she was familiar with the market outlay and some union leaders. Since the questions on risk behaviors were very sensitive in nature, they were placed in the middle of the interview schedule so that the respondent would have achieved a comfort level. There was very limited scope for probing on questions related to risk behaviors. Since presence of other people could inhibit the respondent, it was necessary to interview the respondent separately. It was very fortunate that the godowns provided space for such isolation and there was scope for the respondent to respond without being influenced by others. PSI was engaged in awareness intervention initiatives and was providing Integrated Counselling and Testing services (ICTC) through a mobile unit at both the A.P.M.C market and truck terminus.

The researcher would be accompanied by the field workers who helped to built rapport with the respondent groups. Gradually over a period of time, the workers got used to seeing the researcher at the market. At the A.P.M.C market, the early morning and afternoon hours were suited for data collection as otherwise the workers were engaged in work. The time taken to complete one interview scheduled was half an hour. There was one instance where the mukadam refused permission to interview the workers and the researcher had to move on to the next sample. The reason given by the mukadam was that the workers were educated in his ‘toli’ and did not need information on the topic of HIV/AIDS.

At the truck terminal, the researcher met the manager of the private company responsible for the management of the terminus and sought permission for data collection. Again the purpose of the study and the permission letter from the University was shared with the
 Authorities. The process of mapping the terminus enabled the researcher to become familiar with the terminus and interact with the drivers. The drivers were available throughout the day and were very much willing to answer the interview schedule. The drivers would sit at the shade of the truck and were very cooperative during the interview process. The older men were comparatively more at ease with the topic and acknowledged the possibility of risk behavior but while answering the specific question on risk perception, they chose the category of low or moderate risk. On the issue of homosexuality, the respondents said that they have heard about it but seemed uncomfortable to talk further on this issue.

In a few instances with both the two groups, the researcher faced queries on HIV testing and counseling services which she referred to the local NGOs working in that area for Integrated Counseling and Testing Services (ICTC) services.

In the second phase of study, the researcher visited the two study sites for conducting Focus groups discussion (FGD). For the study group of Mathadi workers, the two FGDs were held at the office of Grocery Markets & Shops Board, Vashi Navi Mumbai. During the process of gathering information through the interview schedule, various Mukadams who were willing to participate in the FGD had been identified. These respondents had been vocal in their opinion, and had been working in the APMC market for a minimum of five years. Each FGD consisted of eight members and lasted from 45 minutes to one hour. The researcher acted as the ‘facilitator’ for the group and the entire discussion was tape recorded with the permission of the group.
On the truck terminus, the researcher conducted the FGD in the terminus on the weekend when the traffic of trucks is very less and the respondents have time to participate in the discussions. At this study site, two FGDs were conducted with each group consisting of 8 members. As the discussion progressed, more drivers joined the group and they were requested to be observers and not participate as the discussions had been initiated. Field workers from the NGO helped the researcher with planning the FGDs and gathering the members for the discussions.

3.11.8 Data Analysis

The data analysis was done by using standard tools of analysis with the help of Statistical Package for Social Sciences (SPSS) version 15. Basic statistics used were frequency tables, percentages, cross tabulations for comparison between truck drivers and mathadi workers. Tests of significance used were chi square test, t test and analysis of variance (ANOVA). For studying correlation of respondent types and risk behavior with gender equitable norms as intervening variable, linear regression test was used.

3.12 Scope of the study

The broad objective of the study is to look at personal vulnerability factors in the context of HIV/AIDS infection among the two groups – truck drivers and mathadi workers. The study aims to bring out descriptive information regarding the behavior practices of the two groups which can be compared. Besides personal vulnerability, the scope of the study includes vulnerability factors at larger macro level. These factors were also included in the study and data collected from respondents. Any similarities and dissimilarities between the units of analysis would contribute in guiding programmatic response during intervention with the two groups. A second important aspect is the
concept of risk perception which is an integral component for behavior change that is the goal of any programmatic intervention carried out. The study tries to bring out the risk perception among the two groups and the factors that may influence this perception.

3.13 Limitations and strengths

Every study has certain limitations and strengths depending on the research site, gender of researcher, time and funds available. The unique demography of the respondents also contributes to this aspect of research. Similarly this research study, had certain limitations and certain strong points during the period in which it was conducted.

Limitations

One of the objective of the study was to bring out information regarding behavior practices. Since the topic is a very sensitive one and secondly the researcher being female, there is scope for respondents not being comfortable with the topic of study. The group of mathadi workers was mainly from the districts of Maharashtra and with a very conservative family background. It took time for the group to acknowledge risk behavior and talk about it in their personal lives.

The study is a cross sectional descriptive study that aims to provide information about the respondent groups at a given point of time. A longitudinal study would provide insight into the trends of behavior patterns among the two groups. Any changes in the epidemic phases can be then observed and studied.

The study is a mixed study with largely quantitative methodology with incorporations of qualitative data through Focus group discussion (FGD). A deeper insight into the ‘why’ of risk behavior, opinion and views of the respondents regarding the causal factor for
risk perception and vulnerability factors at work place would enable social scientists to bring out the complex network of factors associated with risk perception thereby helping to reduce the vulnerability of these groups.

**Strengths**

The researcher has worked with the two respondent groups and was thus familiar with the geographical outlay of the study sites and had a comfort level with the respondent groups. Having worked on the issue of HIV/AIDS awareness, she was familiar with the factors affecting vulnerability of the two groups and this was reflected in the process of data collection.

The local NGO (PSI) working in the area provided immense support in terms of approaching the authorities both at the site of APMC and Truck terminus. Having already worked in that area, the field workers had a good rapport with the working machineries. They have worked on intervention initiatives with the two groups of truck drivers and mathadi workers and had a good rapport with these groups.

The respondents have had the benefit of intervention programmes carried out at APMC and terminus area by the network of NGOs working in the area for the past two decades. They were familiar with the nature of study and more amenable to sharing information particularly on risk behavior.

**3.14 Ethical considerations**

The researcher in the initial stage of data collection approached the Grocery Markets & Shops Board and the Management at Truck terminus for obtaining permission to conduct the data collection among the two study groups. She explained the purpose of the study
and the academic institution to which the researcher belonged and the absence of monetary inducement. She was required to show the letter of permission for data collection obtained from the academic institution.

Informed consent - In order to obtain permission from the prospective respondent the researcher explained the purpose of the study. After explaining in detail, the researcher asked the respondents if they were willing to participate in the interview. She also explained that the names of the respondents will not be revealed in the study. The respondents were interviewed only after obtaining their informed consent.

Confidentiality regarding the names of the respondents is maintained. In some cases, the respondents did not feel comfortable giving their names and the researcher did not force them. The interview schedules were coded listing the interview number.

References


