

**Developing a typology of female sex work, South India,  
with special reference to Karnataka**

Thesis submitted in accordance with the requirements of University College London for the  
degree of Doctor of Philosophy in Population Health

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I, Ana Raluca Buzdugan, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

## **Abstract**

The thesis is premised on the fact that India's National AIDS Control Organization (NACO) employs the typology of female sex work in outreach and other components of the HIV programme in order to identify high-risk female sex workers (FSWs). However, the current typology – distinguishing between FSWs based on their main place of solicitation – may not adequately reflect the variation in HIV risk.

Using data from integrated biological and behavioural assessment surveys among FSWs from three south Indian states, I propose a method for devising evidence-based typologies of sex work which prioritizes place of solicitation and explores other factors potentially helpful for targeted interventions by indicating which FSWs are at high risk. For Karnataka state, the analysis suggests that the typology should distinguish between women based on the main place of solicitation and the main place of sex; this typology identifies street to lodge and brothel to brothel FSWs as being at highest risk for HIV. The strongest HIV/STI risk factor among FSWs from Andhra Pradesh is marital status, while among Tamil Nadu FSWs it is marital status and alcohol consumption respectively. Of the three states, Karnataka typology has the highest outreach applicability, as the main place of sex is linked to a geographical location.

In addition, a qualitative study was conducted in Belgaum district, Karnataka to understand what it is about the mode of operation in different sex work settings that may help explain why some FSW categories are at higher risk for HIV compared to others. The qualitative data identified a number of factors which might help explain why brothel to brothel, lodge to lodge, street to lodge, *dhaba* to *dhaba* and highway to highway FSWs are likely at highest HIV risk, with different vulnerability factors applying to different modes.

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## Glossary

AIDS	Acquired immune deficiency syndrome
Avahan	India Initiative of the Bill and Melinda Gates Foundation
BIRDS	Belgaum Integrated Rural Development Society
CI	Confidence interval
<i>Devadasi</i>	Women dedicated to gods, who engage in sex work
<i>dhaba</i>	Roadside resting places for truckers and other long-distance motorists
<i>dhande</i>	Sex work
EIA	Antibody enzyme immunoassay
FHI	Family Health International
FSW	Female sex worker
<i>gharwali</i>	Brothel madam
<i>gunda</i>	Street thug
HDI	Human development index
HIV	Human immunodeficiency virus
IBBA	Integrated biological and behavioural assessment
ICMR	Indian Council for Medical Research
KHPT	Karnataka Health Promotion Trust
lodge	Small hotel
MSM	Men who have sex with men
NACO	National AIDS Control Organisation
NACP	National AIDS Control Program
NARI	National AIDS Research Institute

NGO	Non-governmental organization
OR	Odds ratios
RPR	Rapid plasma reagin
STI	Sexually transmitted infections
TLC	Time-location cluster
TPHA	<i>Treponema pallidum</i> haemagglutination assay
UNAIDS	Joint United Nations Programme on HIV/AIDS

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## **Preface**

The idea for this thesis and the research plan was conceived by me. I conducted all the literature searches presented in the thesis. I employed two types of data i.e. quantitative data from Integrated Biological and Behavioural Assessment (IBBA) surveys conducted among female sex workers from three states in India and qualitative data from Karnataka state. I was not involved in the design or the implementation of the quantitative survey; I obtained permission from Avahan, the funding organisation, to analyse the survey data (provided merged, cleaned and with attached weights). I designed the analysis plan of the IBBA data, conducted all the analyses and interpreted the results. I designed the qualitative study and coordinated the data collection. I analysed and interpreted the qualitative data (collected by a local interviewer and then translated into English). I also wrote this manuscript and take sole responsibility for its content.

## **Chapter 1. Introduction**

This chapter discusses the state of the HIV epidemic globally and in India, the role played by female sex work in the HIV transmission in India, the history of female sex work, the role of the typology of female sex work to HIV programming and the study objectives. The chapter ends with a brief outline of the thesis.

### **1.1. HIV epidemic in the world**

It is estimated that 25 million people throughout the world have died of acquired immune deficiency syndrome (AIDS) since 1981, when the first AIDS cases were documented. According to the latest report published by the Joint United Nations Programme on HIV/AIDS (UNAIDS), 33 million people (30 million-36 million) were estimated to have been living with human immunodeficiency virus (HIV) in 2007 (UNAIDS, 2008). Overall, HIV incidence appeared to be declining from 3 million (2.6 million-3.5 million) new HIV infections in 2001 to 2.7 million (2.2 million-3.2 million) in 2007. At the same time, the number of AIDS deaths has increased from 1.7 million (1.5 million-2.3 million) deaths in 2001 to 2 million (1.8 million-2.3 million) in 2007.

These overall figures suggest that “on a global scale, the HIV epidemic has stabilized” (UNAIDS, 2008: 32); however, they hide important regional, gender and age variations. For example, 67% of all people living with HIV/AIDS live in sub-Saharan Africa and 75% of all AIDS deaths in 2007 took place there. While overall women and men seem to be equally affected, in some regions women are overrepresented among the HIV infected population e.g. 60% of HIV positive people in sub-Saharan Africa are

women. The HIV epidemic is particularly affecting young people; 45% of the people infected with HIV in 2007 were between 15 and 24 years old.

## **1.2. HIV epidemic in India**

HIV was first detected in India in 1986, among sex workers from Chennai, Tamil Nadu (Simoes et al., 1987). Since then, the epidemic has progressed; it is estimated that the current national adult HIV prevalence is 0.34% (0.25%-0.43%), amounting to between 1.8 and 2.9 million people (National AIDS Control Organization, 2008). The average figure of 2.3 million places India as the third country in the world (after South Africa and Nigeria) and the largest in Asia in terms of the absolute number of people living with HIV and AIDS.

In terms of gender differences, HIV prevalence in India is higher among males (0.40%) than among females (0.27%). It is estimated that 89% of the people living with HIV and AIDS are aged between 15 and 49 years. The highest HIV prevalence is estimated to be in Manipur (1.57%) and Nagaland (1.20%), two states located in the north-east of the country. Among the other states, Andhra Pradesh (0.97%), Karnataka (0.75%) and Maharashtra (0.67%) have the highest HIV prevalence. However, in terms of absolute numbers, the four southern states Andhra Pradesh, Maharashtra, Tamil Nadu and Karnataka contribute 60% of all the people living with HIV and AIDS in India (National AIDS Control Organization, 2008).

With the exception of the north-eastern states, where the HIV epidemic seems to be driven by injecting drug use, most HIV transmission in India is heterosexual (Chandrasekaran et al., 2006). The epidemic appears to be concentrated among high risk groups, such as female sex workers (FSWs), their clients, high risk men who have sex with men (MSM) (including male sex workers and their clients) and injection drug users, as

indicated by the HIV prevalence data. Sentinel surveillance data from 2007 indicate that 7.2% of injecting drug users, 7.4% of MSM, 5.1% of FSWs and 3.6% of attendees of sexually transmitted infections clinics are HIV positive, which is in contrast to the 0.48% of the attendees of ante-natal check-up clinics who tested positive (National AIDS Control Organization, 2008). The available data suggest that the HIV epidemic in India is in the concentrated phase. There is large geographical heterogeneity, between and within the states, indicative of the presence of regional sub-epidemics.

Table 1.1 presents information about the number of female sex workers, male sex workers, and injecting drug users in India, and the prevention programming history by four groups of states (information reproduced from Chandrasekaran et al., 2006). While the estimated size for each high-risk group varies depending on the source, the table clearly shows that female sex workers are the largest high-risk group in India. If one takes into account the first estimate provided in the table for each high-risk group, in India there are between 1,628,998 and 1,845,998 female sex workers, 144,879 to 205,927 men who have sex with men, and 86,392 to 105,681 injecting drug users. Hence, female sex workers represent a sizable population that greatly supersedes the other high-risk groups in India.

Table 1.1. Selected characteristics regarding the HIV epidemic by group of states, India (adapted from Chandrasekaran et al. 2006)

Group	Selected characteristics
Group I: Four high prevalence states in south and west (Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu)	Population: 292 million Predominant HIV risk behaviour: sexual Number of estimated high-risk group: FSW: - 338000 (Avahan programme data; FSWs as proportion of female urban population: 1.27%) - 150421–194594 (NACO; size estimation, coverage; FSWs as proportion of female urban population: 0.56–0.73%) - 869000 (estimate) MSM: - 115000 (Avahan programme data) - 37548–58396 (NACO)

Group	Selected characteristics
	IDU: 8760–10938 (NACO) Prevention programming history: From 7 to 12 years of FSW and high-risk male prevention programming IDU and MSM prevention programming more recent and limited
Group II: Three northeast states (Nagaland, Manipur, Mizoram)	Population: 5.7 million Predominant HIV risk behaviour: IDU Number of estimated high-risk group: FSW: 7998 (NACO; FSWs as proportion of female adult urban population: 1.28%) MSM: 1058–2700 (NACO) IDU: - 54000 (Avahan program data; excludes Mizoram) - 45936–53952 (NACO; IDUs as proportion of adult population: 1.9– 2.7%) Prevention programming history: Over 8 years of IDU prevention programming Sex worker and MSM prevention programming more recent and limited
Group III: A loose grouping of states (Kerala, Gujarat, Goa, West Bengal, Pondicherry, Delhi)	Population: 187 million Predominant HIV risk behaviour: largely sexual (presumed) Number of estimated high-risk group: FSW: - 413 000–500 000 (estimate) - 104217–125907 (NACO; size estimation, coverage; FSWs as proportion of female urban population: 0.60–0.73%) MSM: 26166–76074 (NACO) IDU: 15364–24787 (NACO) Prevention programming history: From 7 to 12 years of FSW and high-risk male prevention programming IDU and MSM prevention programming more recent and limited
Group IV: Rest of India (north, central, parts of the northeast)	Population: 576 million Predominant HIV risk behaviour: largely sexual (presumed) Number of estimated high-risk group: FSW: - 870 000–1000000 (estimate) - 29422–85376 (NACO; limited size estimation exercises, coverage numbers; FSWs as proportion of female urban population: 0.09– 0.27%) MSM: 2655–12153 (NACO) IDU: 8268–15956 (NACO) Prevention programming history: 7 to 12 years of limited high-risk group prevention programming

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Female sex workers have long been acknowledged as one of the core groups of epidemics of sexually transmitted infections (D'Costa et al., 1985; Moses et al., 1991;

Potterat, Rothenberg, & Bross, 1979) and HIV in particular (Plummer et al., 1991). Because they have a large number of sexual partners compared to other populations, sex workers are at higher risk of becoming infected and of infecting others. Similarly, female sex workers play an extremely important role in the HIV epidemic in India. Mathematical modelling has predicted that effective HIV intervention among female sex workers would drive the epidemic to its extinction (Nagelkerke et al., 2002). While national HIV prevalence among female sex workers is estimated at 5.1%, there is large geographical variation. Sentinel data indicate that at the state level, the highest HIV prevalence among female sex workers is in Maharashtra (17.9%), followed by Manipur (13.1%) and Andhra Pradesh (9.7%) (National AIDS Control Organization, 2008). A study conducted among female sex workers from 23 districts in Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu indicated an overall HIV prevalence of 14.5%, with a large inter-district variation, ranging from 2% to 38% (Ramesh et al., 2008).

### **1.3. History of female sex work in India**

As in most societies, it is generally believed that women have been practising sex work in India from times immemorial. The practice was first documented in the Vedas (1500-500 B.C.) (Nag, 2006). In post-Vedic times, both the Mahabharata (8<sup>th</sup> century B.C.–4<sup>th</sup> century A.D.) and Ramayana (750-500 B.C.) mention the existence of courtesans and ‘common’ sex workers. One chapter of the Kamasutra (2<sup>nd</sup> century A.D.) describes courtesans’ lives in detail. It appears that by the 3<sup>rd</sup> century A.D., it has become common for people to dedicate a daughter to temples as an act of devotion to God. While initially these women (called ‘temple servants’ or *Devadasis*) had important ritualistic roles, with time they started offering sexual services to priests and/or other rich powerful men. In the Mughal period

(16<sup>th</sup>-19<sup>th</sup> century), sex work was either encouraged or condemned, depending on the ruler of the day.

Sex work flourished after the entry of Europeans into India in the 16<sup>th</sup> century, as the presence of sailors in port towns resulted in an increase in the demand for sex work services. In Colonial India (19<sup>th</sup>-20<sup>th</sup> century), given the rise in sexually transmitted infections among British soldiers in the second half of the 19<sup>th</sup> century, attempts were made to regulate sex work by instituting mandatory treatment of infected sex workers and by organizing the women into brothels placed within the cantonments (Nag, 2006).

Throughout the 20<sup>th</sup> century, sex work continued to be practised in India. Various forms of sex work co-exist, from traditional (e.g. *Devadasis*) and brothel-based sex work to women soliciting clients in public places.

At present, sex work in India is not illegal per se. As long as it is done by an individual (as opposed to for someone else) and voluntarily, a woman can practise sex work. However, according to the 1956 Immoral Traffic Act, the practice of sex work conducted in a brothel or within 200 metres of certain public places is a criminal offence.

#### **1.4. Global typologies of female sex work**

Much of the research on sex work globally has been initiated due to the risk sex work poses to public health, in connection to sexually transmitted infections. In the last two decades, the threat of HIV has brought sex work into the spotlight and programmes have been established to encourage sex workers and their clients to practise safe sex.

As shown below, a typology of female sex work or distinctions between types of FSWs are mentioned by various organizations and researchers, including the UNAIDS, World Health Organization and – in the Indian context – the National AIDS Control Organization (World Health Organization, 2009; UNAIDS, 2002; National AIDS Control

Organization, 2007a). While none of these organizations explicitly define the typology of female sex work, it seems implied that a female sex work typology is a classification of female sex workers into groups or types. In the broadest sense, a typology is “a classification according to general type, especially in archaeology, psychology, or the social sciences” (Oxford Dictionaries, 2010) or a “study of or analysis or classification based on types or categories” (Merriam-Webster, 2011).

In a ‘Toolkit for Monitoring and Evaluation of Intervention for Sex Workers’, World Health Organization (WHO) distinguishes between “‘direct’ or ‘formal’ sex workers, who are sometimes included in registries and often found in brothels, and ‘indirect’ or ‘casual’ sex workers, who do not engage in sex work full time and are unlikely to be included in registries” (World Health Organization, 2009: ix). At the same time, the document mentions three “types of FSWs”, namely establishment-based (who “work in premises”), street-based and floating sex workers. According to a UNAIDS document on ‘Sex Work and HIV/AIDS’, “sex work can be classified as either ‘formal’ (organized) or ‘informal’ (not organized)”, the difference being that formal sex work is “establishment-based”, while informal sex workers “usually find their clients independently” (UNAIDS, 2002: 4).

Typologies of sex work are employed in various countries. In a review of the existing literature on the sex work industry between 1996 and 2004, Harcourt and Donovan (2005) develop a global typology of sex work to be used as a checklist for situation assessments. The proposed typology of sex work includes both male and female sex workers and encompasses a wide variety of types of sex work, from high client volume sex workers such as brothel-based sex workers to women who generally do not engage in intercourse with their clients such as lap dancers. The authors make a broad distinction

between ‘direct’ and ‘indirect’ sex work and provide a list of the types of sex workers included in each of the two categories.

According to Harcourt and Donovan (2005: 201), ‘direct’ sex work refers to circumstances when “the primary purpose of the interaction is to exchange sex for a fee” and includes the following categories of sex work: street; brothel; escort; private; window or doorway; club, pub, bar, karaoke bar, dance hall; other all-male venues; door knock or hotel; transport (ship, truck, train); CB radio; and other methods of solicitation (see Table 1.2). In the case of ‘indirect’ sex work, “prostitution is not ... the sole or primary source of income for individuals” (Harcourt & Donovan, 2005: 203) and includes women and men engaging in the following activities: bondage and discipline; lap dancing; massage parlour; travelling entertainers; beer girls; street vendors and traders; opportunistic; femmes libre; individual arrangements; swingers clubs; geishas; ‘sex for drugs’; beachboys, bumsters, gigolos; and survival sex (see Table 1.3). Tables 1.2 and 1.3 summarize the descriptions of each type of sex work and the locations around the world where it is practised. The review illustrates the variety of settings where women practise sex work throughout the world.

Harcourt and Donovan (2005) admit at the outset that the typology they are proposing is a simple collection of sex work settings. In their words, “the broad grouping of ‘direct’ and ‘indirect’ sex workers was used because it is already in general usage, particularly in Asia” (2005: 201). While it is important to distinguish between people for whom sex work is the main source of income and their counterparts, this typology is quite broad.

Table 1.2. Typology of ‘direct’ sex work (Harcourt & Donovan 2005: 202)

Type	Geographic distribution
Street: Clients solicited on the street, park or other public places. Serviced in side streets, vehicles, or short stay premises	Widespread, particularly if alternative work sites are unavailable (United States, Europe, United Kingdom,

Type	Geographic distribution
	Australia) and/or there is socioeconomic breakdown (Eastern Europe, parts of Africa, South and South East Asia, and Latin America)
Brothel: Premises explicitly dedicated to providing sex. Better security than street. Often licensed by authorities	Preferred where sex work is decriminalised or brothels are ‘tolerated.’ (Australia, New Zealand, South East Asia, India, Europe, Latin America)
Escort: Client contacts sex worker by phone or via hotel staff. Most covert form of sex work. Relatively expensive because of low client turnover. Service provided at client’s home or hotel room	Ubiquitous. In the United States escorts and private workers contacted by phone and working from a ‘call book’ are known as ‘call girls’ or ‘call men’
Private: Client contacts sex worker by phone. Similar to escorts except services provided in sex worker’s premises. A variant in London and other big cities is ‘flat’ prostitution – high cost services in rented, serviced, inner city units	United Kingdom, Europe, United States, and Australia. Sometimes doorway (see below) and street sex workers bring clients home
Window or doorway: Brothels with sex workers on public display. Windows preferred in cold climates, doorways in warmer places	Window prostitution almost unique to Amsterdam and Hamburg. Doorway prostitution found in less affluent areas of European cities and in African and other developing countries
Club, pub, bar, karaoke bar, dance hall: Clients solicited in alcohol vending venues and serviced on site or elsewhere	Ubiquitous depending on types of male club available
Other all-male venues: Clients solicited in all-male venues such as barbershops, saunas, and mining camps. Serviced on site or elsewhere	Ubiquitous
Door knock or hotel: Unattached males are approached in their hotel rooms or boarding houses	Hotels worldwide and wherever large numbers of unaccompanied male reside
Transport (ship, truck, train): Sex workers may board vehicles to service the crew or passengers or pick up clients at stations or terminals	Ubiquitous
CB radio: Sex workers drive along highways using CB radio to exchange (jargon) messages with potential truck driver clients. Serviced at truck stops or parking areas	United States
Other methods of solicitation: Through various media including noticeboard and newspaper advertisements, ‘sex worker catalogues’ with mobile phone numbers, the internet via virtual brothels, etc. Services are delivered mostly in brothels and other indoor venues	Ubiquitous, but internet and mobile phone services are mostly confined to large cities in developed countries – particularly the United Kingdom and Sweden where legislation limits other forms of advertising

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Table 1.3. Typology of ‘indirect’ sex work (Harcourt & Donovan 2005: 203)

Type	Geographic distribution
Bondage and discipline: sexual fantasy through role play. May involve the inflicting of pain, but genital contact is not routine	Apparently unique to wealthier countries
Lap dancing: A recent development involving erotic dancing at close quarters without sexual contact	Predominantly wealthier countries – often takes place in hotels and clubs
Massage parlour: Premises ostensibly dedicated to providing massage, but a range of sexual services may be provided. In South East Asia similar arrangements may apply in barbershops	Europe, South East Asia, and Australia
Travelling entertainers: Actors, dancers and others involved in entertainment may also provide sexual services	South East Asia
Beer girls: Young women hired by major companies to promote and sell products in bars and clubs. Sexual services sold to supplement income	Cambodia, Uganda, other developing countries
Street vendors and traders: Ostensibly marketing rural produce or other goods but supplementing income with sexual services	Widespread in developing countries
Opportunistic: A person approached in a social venue may occasionally choose to charge sexual favours if the client appears wealthy enough	Ubiquitous
Femme libre: Women, usually single or divorced, who exchange sexual services for gifts. The gifts are then converted to cash	Central Africa
Individual arrangements: The single mother who may have sex with her landlord in place of rent. Older sex workers who only deal with a small number of regular clients, by appointment. ‘Kept’ women or men. Concubines. The number of possible arrangements is vast	Ubiquitous
Swinger clubs: Some swingers or couples sex clubs employ (undisclosed) sex workers if there is a shortage of female guests	Predominantly wealthier countries
Geisha: Women engaged primarily to provide social company, but sex may ensue	Japanese cities
‘Sex for drugs’: Women providing fellatio for crack in crack houses. Young homosexual men in Western countries may provide opportunistic sexual services with drugs	Crack houses are unique to the United States
Beachboys, bumsters, and gigolos: Men and boys engaged by women ostensibly for social purposes but sex is often involved. Some beachboys are under aged and many also service male clients	Resorts, particularly in developing countries
Survival sex: A matter of degree, where starvation or other serious deprivation is imminent, particularly for dependants. Food or security may be the currency, rather than money	Refugee camps anywhere

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In another attempt to develop a global typology of sex work, Blanchard and Moses (2007) classify sex workers by solicitation process, work patterns and venue. First, depending on the solicitation process, they distinguish between brokered and independent sex work, sex workers soliciting in open spaces or fixed venues, and sex workers soliciting opportunistically or in a planned manner. Second, the authors highlight the various work patterns of sex workers, namely full-time or part-time, stationary or mobile, having mostly regular or irregular clients. Third, they acknowledge the variety of venues in which sex workers operate, such as brothels, homes, open spaces, and variable venues.

Blanchard and Moses (2007) mention the ‘direct’/ ‘indirect’ and ‘formal’/ ‘informal’ distinctions and criticise them for resulting in overlapping categories and for the difficulty in placing an individual into a certain category. The authors also highlight the gap between this typology and its usefulness for the HIV programme. At the same time, the distinctions proposed by Blanchard and Moses (2007) do not make up a typology of sex work per se, but a number of dissociated categorisations. Moreover, they end up having the same caveats as the above-mentioned distinctions, in that they are too broad and result in overlapping categories.

### **1.5. Typology of female sex work in India**

Sex work typologies play an important role in HIV programming and research on sex work. According to WHO’s ‘Toolkit for Monitoring and Evaluation of Intervention for Sex Workers’, the sex work typology needs to be taken into account in deciding the type of intervention to be implemented, in analysing the data collected for monitoring and evaluation of the intervention, and in the sampling strategy of surveys conducted among FSWs (World Health Organization, 2009).

In India, the National AIDS Control Programme III integrates “programmes for prevention, care and support and treatment” of HIV/AIDS (National AIDS Control Organization, 2007b). Prevention efforts mainly consist of targeted interventions among high risk groups (female sex workers, men who have sex with men, injecting drug users). In its operational guidelines regarding targeted interventions (TIs) among core high-risk groups, India’s National AIDS Control Organization<sup>1</sup> discusses in detail the typology of sex work. The typology of female sex workers is defined as a classification of FSWs based on their main place of client solicitation into the following categories: street-based, brothel-based, lodge-based, *dhaba*-based, home-based, and highway-based FSWs. The document specifies that categorising FSWs is important “for the purposes of mapping and designing TIs” (National AIDS Control Organization, 2007a: 11). Moreover, the guidelines explain that the typology is a key element of outreach with FSWs, because:

“...outreach strategies differ based on typology of sex work. The outreach strategies for street-based sex work would need to include an intensive peer network in order to reach FSWs both at points of solicitation and points of service. The programme would have to work with madams, owners and lodge boys to reach the brothel and lodge-based FSWs. Home-based sex work may be hidden and would require different strategies. FSWs in brothels and lodges also normally entertain more clients per week and as a result could be considered high volume. Outreach strategies need to reflect sex work typologies within the location with a focus on high volume FSWs.” (National AIDS Control Organization, 2007a: 301)

NACO also explains that the sex work typology is important for designing targeted interventions and needs to be taken into account in conducting mapping exercises and deciding the outreach strategies because “risk varies with typology”. More specifically, “certain typologies (brothel and lodge/dhabha-based sex workers) tend to have higher client volumes than home-based sex workers, and they therefore have a higher risk profile, requiring special focus even within the category of female sex workers” (National AIDS

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<sup>1</sup> National AIDS Control Organisation is the Government of India organization which oversees the implementation of the HIV programme in India.

Control Organization, 2007a: 11). In other words, the sex work typology is employed in HIV programming because it helps identify high-risk female sex workers.

While the outreach usefulness of classifying FSWs based on their main place of client solicitation is fairly obvious, the extent to which the typology is a proxy of HIV risk is not clear. More specifically, the places where FSWs solicit clients are identified during mapping. This has important implications to outreach, as it allows the identification of FSWs without prior contact with the women. At the same time, as shown above, the main place of solicitation is employed by the HIV programme as a proxy of risk. Studies among female sex workers in various parts of India show that the main place of solicitation is a risk factor of HIV (Ramesh et al., 2010; Ramesh et al., 2008), sexually transmitted infections (Ramesh et al., 2010), inconsistent condom use (Dandona et al., 2005) and monthly client volume (Deering et al., 2010). However, as shown in detail in Chapter 2, female sex workers have also been classified based on other criteria (e.g. main place of sex, fee charged per sexual act, relationship with network operator) and these as well as other risk factors can be taken into account in indicating which female sex workers are at highest risk.

The premise of the present thesis is the fact that NACO – the organization overseeing the implementation of the HIV programme in India – employs the sex work typology as a tool to identify high-risk FSWs for targeted interventions. However, the current typology (i.e. distinguishing FSWs by their main place of client solicitation) may not adequately reflect the variation in HIV risk. The work presented in this thesis is an attempt to address this issue; in doing this I propose a method for devising evidence-based typologies of female sex work and try to understand the factors specific to the various sex work settings that explain the variation in HIV risk between categories of female sex workers.

For the purpose of this work, sex work is defined as the “provision of sexual services for money or its equivalent” (Harcourt & Donovan, 2005: 201). The study is limited to female sex work. As shown in section 1.2, female sex workers represent the largest high-risk group in India, with between 1,628,998 and 1,845,998 female sex workers being estimated throughout the country (Chandrasekaran et al., 2006). Moreover, male sex work in India has its own typology, very different from the female sex work typology (Asthana & Oostvogels, 2001; National AIDS Control Organization, 2007a).

### **1.6. Thesis objectives**

The main objectives of the thesis are:

1. To propose a method of developing an evidence-based female sex work typology using quantitative data from Karnataka
2. To assess the level of applicability of the proposed method using quantitative data from Andhra Pradesh and Tamil Nadu
3. To describe the female sex work industry using qualitative data from a district in Karnataka
4. To better understand the differences in HIV risk between various categories of female sex workers using qualitative data from Karnataka

The research for this thesis is divided into three main parts. Firstly, I review the literature on the typology of female sex work and HIV risk factors in India and various methods used to develop typologies. The second part of the thesis describes work undertaken to develop an evidence-based typology of female sex work that specifically takes account of HIV risk. The method is developed using data from integrated biological and behavioural assessment (IBBA) surveys conducted among female sex workers from Karnataka. Subsequently, the method is applied using IBBA data from Tamil Nadu and

Andhra Pradesh in order to assess the level of applicability of the method to other female sex work populations<sup>2</sup>. In the third part of this thesis I describe a qualitative study that was undertaken in order to better understand the reasons for the variation in HIV risk between women who practise sex work in different environments and in different ways. The qualitative study was conducted among women practising sex work in Belgaum district of Karnataka state and provided an opportunity to understand the mode of operation of the sex work industry in the study district.

### **1.7. Thesis outline**

The thesis is organized in eight chapters.

- Following the introductory chapter, Chapter 2 consists of a review of the available literature on the typology of female sex work and HIV risk factors in India and various methods used to develop typologies.
- Chapter 3 presents information about the sources of data and methodology employed in the study, along with details regarding the analysis.
- Chapter 4 proposes a method of developing evidence-based female sex work typologies using quantitative data from Karnataka (objective 1).
- In Chapter 5, I assess the level of applicability of the proposed method using quantitative data from Andhra Pradesh and Tamil Nadu (objective 2).
- Chapter 6 describes the female sex work industry in Belgaum district, Karnataka using qualitative data (objective 3).

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<sup>2</sup> IBBA surveys were also conducted in Maharashtra state. While most IBBA surveys conducted in Maharashtra employed cluster sampling, some of them employed respondent driven sampling (i.e. in Parbhani district, Mumbai, and among Mumbai bar girls). Analysing these data together would not have been appropriate, given the difference in sampling strategy. At the same time, excluding from the analysis the data collected using respondent driven sampling would have provided an incomplete image of the sex work industry in Maharashtra. Hence, the IBBA data collected in Maharashtra state were not used for this thesis.

- In Chapter 7, I attempt to better understand the factors which can explain the differences in HIV risk between various categories of female sex workers (objective 4).
- Chapter 8 discusses the main findings of the study, limitations and implications for the HIV programme in India and future research on sex work.

## **Chapter 2. Literature review**

Taking as a premise the need for a typology to indicate which female sex workers are at high risk of HIV infection, this chapter reviews the literature on female sex work in India and the literature on the methods employed to develop typologies, in order to inform the subsequent quantitative analysis. Firstly, I discuss the various typologies of female sex work employed in India (section 2.1). I then examine the risk factors of HIV, sexually transmitted infections and inconsistent condom use among Indian FSWs (section 2.2). Section 2.3 reviews various methods employed in the development of typologies in the medical sciences.

### **2.1. Typologies of female sex work in India**

The section reviews the existing literature on the typology of female sex work in India. The review aims to identify the various typologies and categories of women practising sex work in India, and the criteria employed to distinguish between the categories of the various typologies.

#### **2.1.1. Literature search strategies**

I conducted a literature search covering the period 1986<sup>3</sup> to July 2008 using the text words: 'India' AND ['sex work' OR 'prostitution' OR 'sex worker' OR 'prostitute']. I searched the following databases: Medline, Pubmed, PsycInfo, Web of Science, Embase, Cinahl Plus, IBSS, Scopus, Jstor (within the following disciplines: Anthropology, Health Policy, Health Sciences, Psychology, Sociology). In addition, I searched for reports, presentations

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<sup>3</sup> The first case of HIV in India was reported in 1986 (E. A. Simoes et al., 1987).

or abstracts that discuss or mention the typology of female sex work. More specifically, I researched the websites of NACO and the main funding organization on HIV prevention and care in India, namely Avahan – India Initiative of the Bill and Melinda Gates Foundation. Subsequently, I searched Google using the combination of words ‘India’ AND [‘sex work typology’ OR ‘typology of sex work’ OR ‘typologies of sex work’ OR ‘sex work typologies’ OR ‘sex work type’ OR ‘type of sex work’ OR ‘types of sex work’ OR ‘form of sex work’]. In addition to the articles and reports found through these searches, I also reviewed books, reports or papers on female sex work found in various libraries in India or from other HIV/AIDS specialists in India. I extracted the references from the databases and selected the studies by examining the title, abstract and/or the content; no other reviewer was involved in this process and this was not intended to be a systematic review. In addition to the studies identified through this search, I included Kotiswaran (2008)’ study which, although published after the search period, makes a significant contribution to the literature on the typology of female sex work in India.

A list of the selected documents is provided in Table 2.1, along with the objective of the paper and the context in which the typology of sex work is discussed or mentioned. The articles, reports, presentations and abstracts that contained discussions or mentions of sex work typologies were organized into two groups, separating between documents that had an explicit discussion on the sex work typology (Tables 2.2 and 2.3) and those which only mentioned or enumerated certain types of female sex workers, without defining them (Table 2.4). The first group of documents was further divided: the first sub-group consisting of documents that discussed sex work typologies at a national level (Table 2.2) and the second consisting of documents that defined sex work typologies within a city or a state (Table 2.3). Comparing typologies characterizing the sex work industry in different geographical areas did not seem to be appropriate, as geographic factors appeared to play

an important role in the comparison of different sex work industries. Within each geographical area, the documents were listed chronologically, as it is likely that understanding of the industry has increased with time. Moreover, the environment in which sex work takes place is dynamic and changes over time.

### **2.1.2. Results of literature search**

The search of the above-mentioned databases resulted in 6866 items (reduced to 5730 after removing the duplicates). Searching websites and contacts with experts identified a further 52 relevant articles, reports, presentations or abstracts. Of these, 61 articles, reports, presentations or abstracts had discussed or at least mentioned various types of female sex workers (6 discussed national-level typologies, 36 regional typologies, 19 only mentioned typologies).

Table 2.1 provides information regarding the objectives of the documents selected and the context in which they discuss or mention the typology. The articles are listed in the same order as they are presented in Tables 2.2 to 2.4, for easy reference. The table indicates that very few of the selected documents set out to develop a typology of sex work. Only one paper discusses proposing a typology of sex work as one of its main objectives (Mukhopadhyay, 1995). However, it is not clear how the proposed typology was developed; the findings of the study are based on data gathered by the author while conducting studies on sex work in Uttar Pradesh and Delhi and while compiling a report on female sex work. Kotiswaran (2008) proposes a revised female sex work typology based on ethnographic data, among the main findings of the paper. Four other papers and one report identify a sex work typology based on their findings from ethnographic and/or mapping data; however, developing a typology of sex work was not a main objective for any of these studies (Asthana & Oostvogels, 1996; Bhattacharya & Senapati, 1994; Cornish, 2004;

Kumar, 2003; National AIDS Control Organization, 1997). Hanck (2007) discusses the typology of sex work in a district in Andhra Pradesh based on data from a quantitative survey (no detailed information is provided, as only the presentation is available). Nag (2006) defines a typology of sex work in India based on the categories of sex workers identified by previous studies. The National AIDS Control Organization (2007a) report proposes a typology of female sex work; however, being an operational guidelines report, it does not discuss the methodology employed to devise the typology. None of the other documents discussed in this review and listed in Table 2.1 set out to develop a typology of female sex work in India; the typology is one of the variables employed in the analysis and/or for sampling purposes or simply discussed or mentioned in the document.

One needs to keep in mind the purpose for which a typology was developed or proposed. For example, the National AIDS Control Organization (2007a) proposes a typology of female sex work to be used for programmatic purposes. On the other hand, Nag (2006) defines a typology expected to encompass the categories of sex work previously documented and serves a research purpose. Therefore, not surprisingly, the proposed typologies are very different and in accordance to their intended purposes. However, the intended purpose of typologies is not always clear e.g. a document may be written as a research paper but the discussion may still be in a programmatic context. In order to avoid over- or misinterpretation of a typology's purpose, this is not included in Table 2.1 which instead provides information about the context in which the typology was discussed or mentioned.

Table 2.1. The objectives of the articles which discuss/mention the typology of female sex work in India and details about the context in which they discuss/mention the typology

Reference	Objective	Typology of sex work
<i>National-level typologies</i>		
Chattopadhyay &	The paper discusses HIV	In the introduction of the paper,

Reference	Objective	Typology of sex work
McKaig (2004)	prevention issues related to FSWs in India and argues for FSWs' empowerment and wider development, in addition to condom-use-based prevention strategies.	as part of an 'overview of commercial sex workers in India,' the authors quote Raghuramaiah (1991) in order to discuss the 'types of prostitution' that exist in India.
Mukhopadhyay (1995)	The paper discusses girl prostitution in India, in terms of its nature, magnitude, typology, causes, consequences, and prevention.	A typology of girl prostitutes (below 20 years) is proposed as one of the main objectives of the paper.
NACO (1997)	The report summarizes the findings of a study conducted among high risk groups in 18 cities in India.	The section on FSWs classifies FSWs into four categories and discusses at length the mode of operation of each category.
Gupta (2004)	The monograph discusses risky sex and addictions, their interconnections, and how they impact health, development, and security in India.	In the context of risky sex, the author discusses the sex work industry and the different types of sex workers that operate in India.
Nag (2006)	The book discusses the history, causes and legal aspects of prostitution in India, and the various categories of sex workers.	In the introduction of the book, the author distinguishes between categories of sex workers (identified by previous studies) and discusses each category in a separate chapter.
NACO (2007)	The report lays out the operational guidelines of targeted interventions among core high risk groups under India's National AIDS Control Programme III.	The report defines the categories of FSWs in India; the resulting typology is recommended for the purpose of mapping and designing targeting interventions.
<b><i>Regional typologies</i></b>		
Asthana & Oostvogels (1996)	The paper examines problems and prospects for participation in HIV prevention strategies among FSWs in Chennai, Tamil Nadu.	The authors discuss at length the sex work industry and categories of sex workers in Chennai identified based on ethnographic and mapping data.
Velu et al. (2003)	The abstract examines the variation in factors predicting condom use across three categories of FSWs from Chennai, Tamil Nadu.	The typology of sex work is employed in the analysis as a stratification variable.
Kumar (2003)	The report discusses the relationship between and risk factors of substance use and high-risk sexual behaviour among sex	The main types of FSWs operating in Chennai were identified based on ethnographic and mapping data. The typology

Reference	Objective	Typology of sex work
	workers and their clients from Chennai, Tamil Nadu.	was employed in the design of the quantitative survey (i.e. sampling procedure).
KSAPS (2004)	The chartbook summarizes the situation of HIV epidemic in Karnataka and the state's response.	The FSW typology is employed to describe the sex work industry in Karnataka and as a main independent variable.
KHPT (2005)	The report describes the protocol of the integrated biological and behavioural assessment surveys in Karnataka.	The report defines the different types of FSWs in Karnataka; the FSW typology is employed in the design of the survey.
Ramesh et al. (2006a)	The presentation examines HIV prevalence across the FSW typology in four Karnataka districts.	The FSW typology is defined and employed as the main independent variable in the analysis.
Isac et al. (2007)	The abstract examined the risk for HIV infection across three categories of FSWs in Karnataka.	The FSW typology is employed as the main independent variable in the analysis. Socio-demographic and sex work-related characteristics of the three FSW categories are compared.
O'Neil et al. (2004)	The paper discusses the results of two ethnographic studies among traditional FSWs from Karnataka ( <i>Devadasis</i> ) and Rajasthan ( <i>Nat</i> ).	In the context of discussing the contemporary sex work industry in rural Northern Karnataka, the authors describe the prevalent forms of sex work.
Orchard (2007)	The paper discusses the micro- and macro- forces that impact child prostitution among young <i>Devadasis</i> in rural Karnataka.	In the introduction, the author describes the locations where modern <i>Devadasis</i> practice sex work and quotes another one of her papers (O'Neil et al. 2004).
Char et al. (2003)	The abstract discusses an HIV intervention programme targeting FSWs working in bars and lodges in Thane, Maharashtra.	The authors distinguish between brothel and non-brothel (including bars and lodges) based FSWs and focus on the second group.
Tata (2004)	The abstract discusses organizational differences between street and brothel-based FSWs from Pune, Maharashtra.	The FSW typology is employed as a stratification variable in the analysis of ethnographic data.
Dandona R et al. (2005a)	The paper examines the prevalence and risk factors of condom non-use with clients and regular partners among FSWs from 13 districts in Andhra Pradesh.	The FSW typology is defined and employed in the sampling strategy and as one of the main independent variables in the analysis of the survey data.
Dandona R et al.	The research letter examines the	The FSW typology is employed

Reference	Objective	Typology of sex work
(2005b)	prevalence and associated factors of HIV testing and the willingness to be tested among FSWs from Andhra Pradesh.	as an independent variable of HIV testing and willingness to undergo HIV testing using survey data.
Dandona R et al. (2006)	The paper examines the sex work characteristics of FSWs in Andhra Pradesh and compares their demographic profile with that of women in the general population.	The FSW typology is employed as one of the main independent variables in the analysis of survey data.
Frontiers (2006)	The report presents the results of a baseline survey among FSWs and men who have sex with men from Andhra Pradesh, conducted part of the evaluation strategy of the Frontiers Prevention Project.	The FSW typology is defined in the Methods section and employed throughout the analysis as a main independent variable.
Kumar et al. (2006)	The paper examines the accessibility of condoms for FSWs in Andhra Pradesh and its determinants.	The FSW typology is defined in the methods section, employed in sampling and the analysis. Separate analyses are conducted for two of the three FSW categories.
Samuels et al. (2006)	The report presents the results of a mixed methods study on social capital and risky behaviour of FSWs and men who have sex with men from Andhra Pradesh.	The FSW typology is employed as an independent variable in the analysis.
Blankenship et al. (2007a)	The presentation examines community mobilization, empowerment and HIV risk of FSWs in Andhra Pradesh.	The FSW typology is one of the variables examined in the analysis, in describing the sex work characteristics of the sample.
Blankenship et al. (2007b)	The presentation examines the role of police in commercial sex work in India using data from a survey among FSWs from Andhra Pradesh.	The FSW typology is employed as a main independent variable in analyses of police raids, arrests and sex with police officers.
Dhopeshwarkar (2007)	The presentation examines the factors associated with consistent condom use with non-client partners by FSWs from Andhra Pradesh.	The FSW typology is employed as an independent variable in analyses predicting consistent condom use.
Hanck (2006)	The presentation examines the implementation and impact of a structural intervention strategy among FSWs in Andhra Pradesh.	The FSW typology is one of the independent variables examined in the analysis.
Hanck (2007)	The presentation examines the	The presentation focuses on

Reference	Objective	Typology of sex work
	variation in the FSW industry in a district in Andhra Pradesh and its implications for community mobilization and empowerment.	discussing the FSW typology in the study area and examines various socio-demographic, sex work and risk variables by FSW typology.
Project Parivartan (2007)	The report discusses demographics, condom use, health knowledge and behaviors, police interactions, and programme exposure of FSWs from a district in Andhra Pradesh.	The FSW typology is employed as an independent variable throughout the analysis of the survey.
West & Irwin (2007)	The presentation discusses respondent driven sampling as a method to reach FSWs in Andhra Pradesh.	The FSW typology is employed as an independent variable in the analysis.
West et al. (2007)	The presentation discusses respondent driven sampling as a method to reach FSWs in Andhra Pradesh.	The FSW typology is employed as an independent variable in the analysis.
Bhattacharya & Senapati (1994)	The paper examines the sexual behaviour and practices of FSWs from a red light area in Kolkata, West Bengal.	The FSW typology is proposed based on ethnographic and mapping data. The sexual behaviour of each FSW category is discussed.
UNAIDS (2000)	As part of the Best Practice Collection, the report discusses the Sonagachi project (Kolkata red light area, West Bengal) as a model of HIV prevention programme among FSWs.	Two FSW typologies are discussed, one in the background section (to describe the mode of operation of FSWs) and one when explaining the sampling strategy of a survey undertaken in Sonagachi area.
Cornish (2004)	The paper discusses condom use in the context of dialogical and sociocultural psychological theory, using ethnographic data among FSWs from a Kolkata red light area.	The author describes the FSW typology in the study area and discusses condom use for each of the two modes of sex work organisation.
Pardasani (2005)	The paper examines the impact and influence of advocacy on HIV prevention efforts among FSWs from Sonagachi, Kolkata.	In a background section of the paper describing the sex work industry in Kolkata, the author distinguishes between three FSW settings.
Gooptu & Bandyopadhyay (2007)	The paper examines how FSWs from Kolkata red-light areas reinvented themselves as social actors endowed with a sense of collective rights and capacity.	The FSW typology is briefly defined in the context of explaining Durbar, the organization of FSWs from Sonagachi.

Reference	Objective	Typology of sex work
Evans & Lambert (2008)	The paper discusses the appropriateness of applying individual, social/group and structural theories of health behaviour to HIV prevention initiatives, using ethnographic data among FSWs from Kolkata.	In the methods section, in the context of describing the research setting, the authors define the 'different sex-work arrangements' existing in the area.
Basu & Dutta (2008)	The paper employs qualitative data to examine how communicative narratives of agency and resistance are enacted in the lives of FSWs from two Kolkata red-light areas.	The FSW typology is briefly defined in the context of describing the sex work industry in Sonagachi, one of the study sites.
Kotiswaran (2008)	The paper discusses the normative status of sex work, the political economy and legal ethnography of Sonagachi (Kolkata), and the relationship between criminal law and sex markets.	In the context of discussing the sociology of sex work in Sonagachi, the author describes previous FSW typologies and proposes a revised typology, based on ethnographic data.
Fung et al. (2007)	The paper estimates the cost-effectiveness of an HIV prevention programme among FSWs from Ahmedabad, Gujarat.	The FSW typology is one of the variables employed in analysis displayed in an appendix of the paper.
Jayasree (2004)	The paper discusses the sex work environment in Kerala and the women's efforts to claim their rights.	The authors define a FSW typology and discuss the experiences of different categories.
Singh et al. (2005)	The paper discusses the increasing HIV seropositivity among FSWs attending an HIV testing centre in Manipur.	The FSW typology is defined in the methods section, in the context of describing the sex work industry in Manipur.
<b><i>Other mentioned typologies</i></b>		
Venkataramana & Sarada (2001)	The paper examines the factors that influence the spread of HIV in sexual networks and estimates the extent of new infections in FSWs in India between 2000 and 2005.	An enumeration of various categories of FSWs in India is included in the discussion section of the paper.
Hawkes & Santhya (2002)	The paper discusses the epidemics of sexually transmitted infections and HIV in India.	The authors quote the NACO (1997) typology, in the context of discussing commercial sex in India.
Chandrasekaran et al. (2006)	The paper discusses the HIV epidemic in India and the national programmatic response.	The authors include the distribution of FSWs in South India by sex work solicitation.

Reference	Objective	Typology of sex work
Amin (2004)	The report examines the responses of the government and U.S. donors to the HIV epidemic among FSWs from Tamil Nadu and Maharashtra.	In the context of describing the sex work industry in Tamil Nadu and Maharashtra, the author mentions FSWs categories in each state.
Panchanadeswaran et al. (2008)	The paper examines the experiences of street-based FSWs from Chennai, Tamil Nadu, in terms of the relations with clients and partners, and the intersection with violence, alcohol use and condom use.	A short mention of the types of sex work in Chennai is included in the background section of the paper.
Blanchard et al. (2005)	The paper compares the socio-demographic characteristics and sex work patterns of <i>Devadasis</i> and non- <i>Devadasis</i> in Karnataka.	The place where FSWs entertain their clients is employed as an independent variable in the analysis.
Halli et al. (2006)	The paper evaluates the role of FSW collectives in Karnataka in increasing knowledge and promoting safe sexual behaviour.	The place of sex work is employed as an independent variable in the analysis and as a stratification variable for sampling purposes.
Ramesh et al. (2006b)	The presentation discusses the mapping of high risk locations for scaling-up the HIV prevention programme in Karnataka.	The authors present the distribution of FSWs by 'sex work type' for the entire population and by district.
FHI (2001a)	The report discusses the results of mapping of commercial sex access points and sites of condom and health service availability in Maharashtra.	The authors distinguish between brothel and non-brothel-based sex access points.
FHI (2001b)	The report presents the findings of surveys conducted among FSWs, men who have sex with men, transport workers and male youth from slums in Maharashtra.	The authors distinguish between brothel and non-brothel-based FSWs; separate surveys were conducted for each FSW category.
Brahme et al. (2006)	The paper examines the trend of HIV prevalence among FSWs attending sexually transmitted disease clinics in Pune, Maharashtra, and the factors associated with HIV infection.	In the introduction of the paper, the authors mention the number of FSWs residing and not residing in brothels in Pune.
Pillai, Seshu & Shivdas (2008)	The paper discusses two sex worker organisations (SANGRAM, VAMP) from Sangli, Maharashtra.	The authors mention the groups covered by the term 'people in prostitution and sex work' in Sangli.
Dandona L et al. (2005)	The paper examines the outputs, cost and efficiency of HIV	The authors mention the estimates of programme coverage by type

Reference	Objective	Typology of sex work
	prevention programmes for FSWs in Andhra Pradesh.	of FSWs.
Chathukulam & John (2002)	The paper discusses gender issues in the context of sexual health projects for FSWs from Kottayam, Kerala.	When discussing the study context, the authors mention the types of FSWs covered and not covered in the study.
Gangopadhyay et al. (2005)	The paper compares rates of sexually transmitted diseases between the Sonagachi Project and other areas in Kolkata, West Bengal.	In the methods section, the authors distinguish between brothel-based and floating FSWs. Only brothel-based FSWs were included in the study.
Kumar (1998)	The article discusses the West Bengal Sexual Health Project as a model HIV intervention project.	The author distinguishes between brothel-based and floating FSWs.
Sarkar et al. (2005)	The paper discusses the results of an epidemiological survey conducted among brothel-based FSWs from Kolkata, West Bengal.	In the introduction section of the paper, when describing the sex work industry in Kolkata, a brief distinction is made between brothel-based and floating FSWs.
Evans & Lambert (1997)	The paper discusses health-seeking strategies related to sexual health based on ethnographic data among FSWs from Kolkata, West Bengal.	The authors briefly distinguish between independent FSWs and those working under the control of brothel madams and pimps.
Basu et al. (2004)	The paper assesses the efficacy of Sonagachi Project, a sustainable community-level HIV intervention among FSWs from Kolkata, West Bengal.	The authors distinguish in the introduction between street-based and brothel-based FSWs and employ 'type of contractual agreement' as an independent variable in the analysis.

FSW=female sex worker

### 2.1.2.1. National typologies of sex work in India

Table 2.2 summarizes the sex work typologies employed in India at a national level and provides the definitions used by the various authors.

The first documented national sex work typology in India is defined by Raghuramaiah (1991) (quoted by Chattopadhyay & McKaig, 2004). He distinguishes between common prostitutes, singing and dancing girls, concubines/semi-attached prostitutes, call girls, religious prostitutes, cage/brothel prostitutes and wayside or

hitchhiking prostitutes. The author distinguishes between these categories based on the FSWs' practice, however it is not clear what the practice refers to. The FSW categories are not mutually exclusive, for example 'religious prostitutes' denotes how a woman enters prostitution rather than how she practises and hence can apply to several categories of female sex workers within the typology e.g. could denote 'common' or 'wayside prostitutes'. Similarly, 'cage/brothel prostitutes' are a subgroup of 'common prostitutes' (see Table 2.2).

Mukhopadhyay (1995) sets out to propose a typology of girl prostitutes. The classification distinguishes between common girl prostitutes, singing and dancing girls, call girls, religious and cage girl prostitutes. The author does not specify the criterion on which he makes the distinction between the categories, which are not mutually exclusive. Of note, the typology does not include street-based FSWs, the most widely practised form of female sex work in India (Chandrasekaran et al., 2006).

A more exhaustive sex work typology is defined by NACO in 1997, based on a descriptive study conducted in eighteen cities in India (National AIDS Control Organization, 1997). The NACO typology distinguishes based on the mode of operation between brothel-based, home-based and part-time, street-based FSWs, and call girls. The categories are not mutually exclusive, as part-time FSWs could be found in any other type of FSWs.

In a report on sex work in India, Gupta (2004) distinguishes between brothel-based, street workers, housewives and casual workers, call girls and boys, and sex in exchange for favours. He does not specify the criterion by which he makes this distinction and the categories are overlapping, as casual FSWs can operate in a variety of settings.

Table 2.2. National level typologies of female sex work in India

Reference	Typology	Definition of types of sex work	Criterion
Raghuramaiah (1991) quoted by Chattopadhyay & McKaig (2004)	<i>Common prostitutes</i>	Full-time sex workers working through brothels, roadside hotels, restaurants.	Practice
	<i>Singing and dancing girls</i>	Work under the pretext of dancing and singing.	
	<i>Concubines/semi-attached prostitutes</i>	Have long-term relationships with men usually from rich families.	
	<i>Call girls</i>	Urban part-time working adult women who have sex for money with rich men.	
	<i>Religious prostitutes</i>	Women initiated into sex work at an early age under the pretext of religion.	
	<i>Cage/brothel prostitutes</i>	Mostly young girls or children kept under confinement by brothel madams.	
Mukhopadhyay (1995)	<i>Wayside or hitchhiking prostitutes</i>	Operate on the roadside or on highways.	Unspecified
	<i>Common girl prostitutes</i>	Work mainly in brothel settings.	
	<i>Singing and dancing girls</i>	Practice sex work secretly, under the pretext of working as singers, dancers, masseuses.	
	<i>Call girls</i>	Sex workers from the middle and upper classes operating through a manager.	
	<i>Religious prostitutes</i>	Sex workers such as <i>Devadasis</i> .	
NACO (1997)	<i>Cage girl prostitutes</i>	Minor sex workers bonded to a brothel until the advance given against her to her procurers is paid from her earnings from sex work.	Mode of operation
	<i>Brothel-based FSWs</i>	Work in brothels that range from highly restrictive arrangements to contractual agreements that do not limit women's movements. Include lodge-based FSWs.	
	<i>Home-based and part-time FSWs</i>	Home-based FSWs range between women working in slums to high-status singers and dancers. Part-time FSWs are primarily engaged in other occupations through which they solicit clients.	
	<i>Street-based FSWs</i>	Solicit clients themselves and work independently. Include women working along highways and in <i>dhabas</i> (rest stops).	
Gupta (2004)	<i>Call girls</i>	Middle or upper class women who work clandestinely through agents or independently.	Unspecified
	<i>Brothel-based workers</i>	The lowest class of FSWs, living in 'cages' under the strict control of pimps	

Reference	Typology	Definition of types of sex work	Criterion
		and madams.	
	<i>Street workers</i>	Do not have a fixed place of operation, pick up clients on the street or other public places.	
	<i>Housewives and casual sex workers</i>	Do not identify themselves as FSWs and do sex work on a part time basis, usually secretly.	
	<i>Call girls and boys</i>	High class sex workers contacted through escort services.	
	<i>Sex in exchange for favours</i>	Specific to all social groups, from poor to rich.	
Nag (2006)	<i>Devadasis</i>	Women dedicated as <i>Devadasis</i> to gods who engage in sex work.	Unspecified
	<i>Hereditary FSWs</i>	Women from semi-nomadic communities where sex work is a hereditary profession.	
	<i>Singing/dancing FSWs</i>	Women from communities where dance and music are hereditary professions.	
	<i>Brothel-based FSWs</i>	Live and practice sex work in brothels located in or outside red-light areas.	
	<i>Floating (flying or street) FSWs</i>	Solicit clients in public places and entertain them in lodges (lodge-based sex workers) or public places (street-based FSWs).	
	<i>Call girls</i>	Contact their clients over the phone through agents.	
	<i>Male sex workers</i>	Include <i>hijras</i> (eunuchs) sex workers and male sex workers.	
	<i>Child sex workers</i>	Both female and male sex workers of age 18 years or below.	
NACO (2007)	<i>Street-based FSWs</i>	Solicit clients on the street or in public places such as parks, railway stations, bus stands, markets, cinema halls.	Primary place of solicitation
	<i>Brothel-based FSWs</i>	Are contacted by clients in recognised brothels (buildings or residential homes where people from outside the sex trade know that FSWs work).	
	<i>Lodge-based FSWs</i>	Live in lodges (small hotels) and their clients are contracted by the lodge owner, manager or employee of the lodge for a commission.	
	<i>Dhaba-based FSWs</i>	Solicit clients in <i>dhabas</i> (roadside resting places for truckers and other long-distance motorists) or roadside country motels.	
	<i>Home-based FSWs</i>	Usually operate from their homes, contacting their clients on the phone, through word of mouth or middlemen.	
	<i>Highway-based FSWs</i>	Solicit clients on the highways, usually among long-distance truck drivers.	

In a book on sex work in India, Nag (2006) distinguishes between *Devadasis* (women dedicated to gods, who engage in sex work), hereditary FSWs, singing/dancing FSWs, brothel-based FSWs, floating (flying or street) FSWs, call girls, male sex workers and child sex workers. The criterion for the typology is not specified and the author acknowledges that these categories are not mutually exclusive, but decides to keep them conceptually distinctive for “heuristic and descriptive purposes” (Nag, 2006: 5). The typology is proposed based on previous studies on sex work in India.

In 2007, NACO revises its earlier typology of female sex workers (1997) and proposes, as part of the guidelines for targeted interventions under National AIDS Control Program (NACP) III, a typology that distinguishes between street-based, brothel-based, lodge-based, *dhaba*-based, home-based and highway-based FSWs (National AIDS Control Organization, 2007a). The typology distinguishes between these mutually exclusive categories of FSWs based on the women’s primary place of client solicitation. The report also mentions FSWs who have various primary occupations different than sex work, but a large proportion of their occupational group often practises sex work (e.g. bar girls, dancers). The report does not go into the details of how the typology was developed.

#### **2.1.2.2. Regional typologies of sex work in India**

In addition to the national level typologies, various researchers and programmers employ sex work typologies specific to certain geographic locations in India (Table 2.3). These are often a sub-set of the categories proposed at the national level as not all types of female sex workers are present at any given site. These sex work typologies are organized by state and/or city, for ease of comparison.

Table 2.3. Documented typologies of sex work in India by state and/or city

Reference	Typology	Definition of types of sex work	Criterion
<b>Chennai, Tamil Nadu</b>			
Asthana & Oostvogels (1996)	<i>Street workers</i>	Undefined.	Unspecified
	<i>Brothel workers</i>	Live in small brothels.	
	<i>'Family girls' or 'housewives'</i>	Live in regular households and often sell sex without the knowledge of their families and neighbours.	
	<i>Call girls</i>	Operate in good hotels and have high status clients.	
Velu et al. (2003)	<i>'Ali'</i>	Members of the Ali community who practice sex work.	Unspecified
	<i>Street-based FSWs</i>	Undefined <sup>a</sup> .	
	<i>Brothel-based FSWs</i>	Undefined <sup>a</sup> .	
	<i>Discreet FSWs</i>	Undefined <sup>a</sup> .	
Kumar (2003)	<i>Street-based FSWs</i>	Solicit clients on the street, mostly independently.	Unspecified
	<i>Brothel-based FSWs</i>	Solicit clients in brothels, through brokers.	
	<i>Apartment or house-based FSWs</i>	Work in homes of 2 to 3 sex workers, along with an older person and disguise their work. Clients take them from the homes to other houses or hotels.	
	<i>Mobile FSWs</i>	Move in cars or vans, solicit clients through brokers using phones and have sex in lodges.	
<b>Karnataka</b>			
KSAPS (2004)	<i>Home-based FSWs</i>	Work in their residences and do not go out to solicit clients.	Unspecified, but implied as place of solicitation
	<i>Brothel-based FSWs</i>	Work in a brothel under a <i>gharwali</i> to whom they pay part of their earnings.	
	<i>Hotel/lodge-based FSWs</i>	Live and solicit clients in a lodge. Clients come by themselves or brought by pimps.	
	<i>Public places FSWs</i>	Solicit clients in public places and entertain them in lodges, homes, brothels or public places.	
	<i>Dhaba-based FSWs</i>	Solicit in <i>dhabas</i> .	
KHPT (2005)	<i>Home-based FSWs</i>	Work at their places of residence and do not solicit clients outside their houses.	Place of solicitation
	<i>Brothel-based FSWs</i>	Work in a brothel, under a brothel madam or an agent and pay part	

Reference	Typology	Definition of types of sex work of their earnings to her/him.	Criterion
	<i>Lodge/dhaba-based FSWs</i>	Solicit in the lodge or <i>dhaba</i> with the help of pimps or brokers.	
	<i>Public places-based FSWs</i>	Solicit in public places.	
Ramesh et al. (2006a)	<i>Home-based FSWs</i>	Receive clients at their homes and do not go out to solicit.	Unspecified, but implied as place of solicitation
	<i>Brothel-based FSWs</i>	Receive clients at a brothel and do not go out to solicit.	
	<i>Street-based FSWs</i>	Solicit clients on the street and other public places.	
Isac et al. (2007)	<i>Brothel-based FSWs</i>	Undefined <sup>a</sup> .	Place of solicitation
	<i>Home-based FSWs</i>	Undefined <sup>a</sup> .	
	<i>Public places-based FSWs</i>	Undefined <sup>a</sup> .	
<b><i>Northern Karnataka, rural areas</i></b>			
O'Neil et al. (2004)	FSWs who work in brothels of 1-2 girls living with the <i>gharwali</i> (often also doing sex work)		Unspecified
	<i>Home-based FSWs</i>	Work in their homes and make their own arrangement for clients	
	FSWs who work in hotels, lodges or <i>dhabas</i> and rely on the establishment owner to get clients		
Orchard (2007)	Home-based <i>Devadasis</i>	Work out of their homes or in the houses of <i>Devadasi</i> neighbours	Unspecified
	Lodge-based <i>Devadasis</i>	Undefined	
	Brothel-based <i>Devadasis</i>	Work in small brothels (1-2 girls living in a home under the watch of a <i>gharwali</i> ) in an identifiable sex work area in large rural centres	
<b><i>Thane, Maharashtra</i></b>			
Char et al. (2003)	<i>Brothel-based FSWs</i>	Undefined <sup>a</sup> .	Unspecified
	<i>Non-brothel-based FSWs (including street-based and bar-based FSWs)</i>	Undefined <sup>a</sup> .	
<b><i>Pune, Maharashtra</i></b>			
Tata (2004)	<i>Brothel-based FSWs</i>	Undefined <sup>a</sup> .	Unspecified
	<i>Street-based FSWs</i>	Undefined <sup>a</sup> .	
<b><i>Andhra Pradesh</i></b>			
Dandona R et al. (2005a, 2005b, 2006), Frontiers	<i>Street-based FSWs</i>	Primarily solicit clients on streets or public places and have sex at lodges/hotels or a place chosen by the client.	Unspecified, but implied as place of solicitation
	<i>Home-based FSWs</i>	Primarily solicit clients at home directly or through mediators and	

Reference	Typology	Definition of types of sex work	Criterion
(2006), Kumar et al.		have sex at home.	
(2006), Samuels et al. (2006)	<i>Brothel-based FSWs</i>	Primarily solicit clients through an agent (e.g. pimp, madam) and have sex at the brothel (place of sex work with at least 2 FSWs working under the control of an agent).	
<b><i>Rajahmundry, East Godavari, Andhra Pradesh</i></b>			
Blankenship et al. (2007a, 2007b), Dhopeswarkar (2007), Hanck (2006, 2007), Project Parivartan (2007), West & Irwin (2007), West et al. (2007)	<i>Home-based only</i>	Undefined <sup>a</sup> .	Unspecified
	<i>Highway-based only</i>	Undefined <sup>a</sup> .	
	<i>Street-based only</i>	Undefined <sup>a</sup> .	
	<i>Lodge-based only</i>	Undefined <sup>a</sup> .	
	<i>Brothel-based only</i>	Undefined <sup>a</sup> .	
	<i>Agriculture-based only</i>	Undefined <sup>a</sup> .	
	<i>Multiple types</i>	Undefined <sup>a</sup> .	
<b><i>Kolkata, West Bengal</i></b>			
Bhattacharya & Senapati (1994)	<i>Permanent FSWs</i>	FSWs who are permanent residents of the red-light area.	Unspecified, but implied as degree of residence in red light area
	<i>Fixed flying FSWs</i>	Come from other areas and rent rooms in the red-light area on a daily basis.	
	<i>Flying FSWs</i>	Solicit clients in other areas and have sex in rooms in the red-light area rented per sex act.	
UNAIDS (2000)	<i>Chukris</i>	Young women bonded to a madam against an advance given to her procurer (e.g. trafficker, family).	Unspecified, but implied as agreement with the brothel madam
	<i>Adiyas</i>	Pay half of their income to the brothel madam.	
	<i>Freelance or 'flying' FSWs</i>	Solicit clients in the street or various public places and rent rooms on an hourly basis in the red-light areas.	
	<i>Category A</i>	Charge more than Rs100 per sex contact	
	<i>Category B</i>	Charge between Rs50 and Rs100 per sex contact	
	<i>Category C</i>	Charge less than Rs50 per sex contact	Fee solicited from client
Cornish (2004)	<i>Independent FSWs</i>	Rent a room in the red light area and decide the timings and conditions of their work.	Mode of organization
	<i>FSWs working in the</i>	Work for a malkhin (brothel madam) and pay 50 percent of	

Reference	Typology	Definition of types of sex work	Criterion
Pardasani (2005)	<i>malkhin</i> (' <i>madam</i> ' system)	earnings for accommodation, food and security.	Unspecified
	FSWs who rent rooms from brothel owners and work independently		
	FSWs who live in the brothel and work directly for the brothel owner		
Goptu & Bandyopadhyay (2007)	FSWs who cannot afford to rent rooms and work in the streets, back alleys, customers' cars		Unspecified, but implied as place of solicitation
	FSWs who work in brothels in red-light districts		
Evans & Lambert (2008)	'Flying' FSWs	FSWs who gather daily at particular spots (e.g. railway station) to be picked up by clients	Unspecified, but implied as agreement with the brothel madam
	Women who rent their own rooms and work independently.		
	<i>Adiyas</i>	Women who work for a madam and pay rent and half of their earnings. They solicit clients on their own, in the street.	
	'High-class' <i>adiyas</i>	<i>Adiyas</i> who solicit clients through pimps.	
Basu & Dutta (2008)	<i>Chukris</i>	Young women bonded to a madam against an advance given to her procurer (e.g. trafficker, family).	Unspecified, but implied as residential status
	<i>Full-timers</i>	Live in the red-light area	
Kotiswaran (2008)	<i>Casuals</i>	Commute to the red-light area on a daily or seasonal basis	Unspecified, but implied as residential status
	<i>Brothel-based FSWs</i>	Residential sex workers in the red-light area	
	<i>Flying (floating) FSWs</i>	Travel to the red-light area on a daily basis	Unspecified, but implied as residential status
	<i>Category A</i>	Earn more than Rs100 per sex contact	
	<i>Category B</i>	Earn between Rs50 and Rs100 per sex contact	
	<i>Category C</i>	Earn less than Rs50 per sex contact	Labour relation between brothel owner/keeper and sex worker, scale of the brothel, tenancy interest in the real estate
	<i>Chhukri</i>	Bonded to the brothel madam	
	<i>Adhiya</i>	Shares half of her income from sex work with the brothel keeper.	
		Subtypes of <i>adhiyas</i> , depending on the scale of the brothel:	
		Adhiya in brothels with one FSW	
	Adhiya in medium-sized brothels (1-9 FSWs)	Unspecified, but implied as residential status	
	Adhiya in large brothels (10 or more FSWs)		
	<i>Independent FSWs</i>	Work independently and appropriates the income from her labour. Subcategories of independent FSWs, depending on the tenancy	

Reference	Typology	Definition of types of sex work	Criterion
		interest in the real estate market: Flying FSWs (do not reside in the red light area) Residential FSWs who rent from a tenant who can sublet the room Residential FSWs who rent from a landlord (and paid a premium)	market
<b>Ahmedabad, Gujarat</b>			
Fung et al. (2007)	<i>Street CSWs</i>	Usually solicit sex on various locations on the street.	Unspecified
	<i>Brothel-based CSWs</i>	Work from lodges or brothels in groups of five or more.	
	<i>Residential CSWs</i>	Work from home, often not full-time.	
	<i>Call girls</i>	Work using phones or cell phones.	
	<i>Mobile CSWs</i>	Usually migrant CSWs staying in town for 2 to 3 months.	
<b>Kerala</b>			
Jayasree (2004)	<i>Street-based FSWs</i>	Are homeless, solicit in the street and have sex at the roadside or in lodges.	Unspecified
	<i>Lodge-based FSWs</i>	Have their own homes, solicit in the street or with the help of lodge owners and have sex in lodges.	
	<i>'Family girls'</i>	Entertain clients in their homes independently or through agents.	
<b>Manipur</b>			
Singh et al. (2005)	<i>Free CSWs</i>	Work independently, decide the price and place of sex. Cannot be easily identified, as they try to keep their sex work secret.	Nature of the sex work network
	<i>CSWs through agents</i>	Work through agents. Are easily identifiable as sex workers.	

<sup>a</sup> The document discusses the typology of sex work, but a definition of each type of sex work is not provided because only the abstract or presentation is available.

Asthana and Oostvogels (1996) describe the sex work industry in Chennai, Tamil Nadu based on ethnographic and mapping data. The authors identified five categories of FSWs: street workers, brothel workers, 'family girls' or 'housewives', call girls and 'alis'. They also distinguish among street workers in terms of the time and places where they work, which are indicative of their socio-economic status. A subsequent study conducted in Chennai distinguished between street-based, brothel-based and discreet FSWs (Velu, Melkote, & Skinner, 2003). Based on ethnographic and mapping data collected in the same city, Kumar (2003) identified street-based, brothel-based, apartment or house-based and mobile FSWs. None of the authors explicitly mention the criterion by which these categories of FSWs are distinguished.

In Karnataka, the main categories of female sex workers documented are home-based, brothel-based and street-based (also called public places-based) (Isac et al., 2007; Ramesh et al., 2006). Other sources also mention lodge-based and *dhaba*-based FSWs, either as subgroups of the same type of sex work (Karnataka Health Promotion Trust, 2005) or as separate categories (Karnataka State AIDS Prevention Society, 2004). The female sex work typologies from Karnataka are distinguished by the main place of solicitation, which is either directly stated or implied. In the rural areas of Northern Karnataka, most FSWs work in brothels, their own homes, in hotels, lodges or *dhabas* (O'Neil et al., 2004). Traditional *Devadasi* FSWs from the same rural area are mostly home-, lodge- or brothel-based (Orchard, 2007).

Maharashtra is well known for its brothel-based sex work concentrated within red-light areas situated in various cities e.g. Mumbai, Pune, Sangli. Researchers working in Thane district of Maharashtra state distinguish between brothel-based and non-brothel-based sex work, which includes sex work in bars and lodges (Char, Piller, & Shirke, 2003).

In the context of Pune, Tata (2004) distinguishes between brothel-based and street-based FSWs.

In the case of Andhra Pradesh, two typologies have been employed. One distinguishes between street-based, home-based and brothel-based sex workers (Dandona et al., 2005a, 2005b, 2006; Frontiers Prevention Project, 2006; Kumar et al., 2006; Samuels et al., 2006). While the authors do not clearly state the criterion these categories are distinguished by, it seems implied that it is based on sex workers' places of solicitation. Another research team working in Rajahmundry, Andhra Pradesh distinguishes between brothel-, home-, street-, lodge-, highway-, agriculture-based and multiple types of sex work (Blankenship et al., 2007a, 2007b; Dhopeswarkar, 2007; Hanck, 2006, 2007; Project Parivartan, 2007; West & Irwin, 2007; West et al., 2007).

Much of the sex work in Kolkata, West Bengal is concentrated within red-light areas. Researchers have distinguished between categories of female sex workers by taking into account various criteria. Bhattacharya and Senapati (1994) proposed a typology distinguishing between permanent (red-light area residents), fixed flying (rent rooms daily) and flying FSWs (solicit in other areas and rent rooms per sex act in the red-light area), based on ethnographic and mapping data. The authors do not specify the criterion to classify FSWs, but it is implied as the degree of residence in the red-light area. Pardasani (2005) also mentions FSWs who cannot afford to rent rooms and work in the streets, back alleys or cars. Gooptu and Bandyopadhyay (2007) distinguish between FSWs from brothels and 'flying' FSWs who pick up clients in other spots (e.g. railway station); the criterion is not specified, but it is implied as the place of solicitation. Basu and Dutta (2008) distinguish between full-timers (who live in the red-light area) and casuals (who commute to the area daily or seasonally). Cornish (2004) distinguishes based on the mode of organisation between independent FSWs and those working in the *malkhin* (madam)

system. A UNAIDS report distinguishes between freelance or ‘flying’ FSWs, *chukris* (young women bonded to a madam against an advance given to her procurer) and *adiyas* (who pay half of their income to the brothel madam) (UNAIDS, 2000). In addition, Evans and Lambert (2008) also distinguish between *adiyas* (who work for a brothel madam) and ‘high-class *adiyas*’ (who solicit clients through pimps). While the authors do not specify the criterion used for this typology, it is implied as the type of agreement with the brothel madam. Another distinguishing criterion is the fee charged per client by the sex worker, which results in a classification of sex workers in categories A, B and C (Evans & Lambert, 2008; UNAIDS, 2000). Kotiswaran (2008) mentions previous typologies employed in Kolkata (brothel-based vs. flying FSWs; categories A, B, and C; *chhukri*, *adhiya*, and independent FSWs) and proposes a revised typology based on findings from ethnographic data. The author distinguishes based on the labour relation between the brothel owner/keeper and the sex worker between *chhukris*, *adhiyas* and independent FSWs. *Adhiyas* are further subdivided based on the scale of the brothel into *adhiyas* who work in brothels with one FSW, in medium-sized brothels and in large brothels. Independent FSWs are classified depending on their tenancy interest in the real estate market in the red-light area into flying FSWs (who do not reside in the red-light area), residential FSWs who rent from a tenant who can sublet the room and residential FSWs who pay a premium in order to rent from a landlord.

Fung et al. (2007) classify female sex workers from Ahmedabad, Gujarat into street, brothel-based, residential, mobile FSWs and call girls. A study conducted in Kerala classifies FSWs into street-based, lodge-based FSWs and ‘family girls’, typology “based on the sex workers’ own reports” (Jayasree, 2004: 58). The authors of neither of these two studies clearly mention the classification criterion. In the context of Manipur, Singh et al.

(2005) classify sex workers depending on the nature of the sex work network into free sex workers and those who work through agents.

For a complete list of the sex work typologies in India, I also summarize the documents which mention typologies, without clearly defining the categories (Table 2.4). At a national level, in addition to the categories of sex workers already discussed in subsection 2.1.2.1, Venkataramana and Sarada (2001) also mention bar girls. In the context of south India, Chandrasekaran et al. (2006) mention bar-based and cell phone-based sex workers. Highway-based FSWs are also documented in studies from Tamil Nadu (Amin, 2004) and Karnataka (Blanchard et al., 2005), housewives in Sangli, Maharashtra (Pillai, Seshu, & Shivdas, 2008), and FSWs operating from parked vehicles, casuals and high-profile FSWs in Kerala (Chathukulam & M. S. John, 2002).

Table 2.4. Annotated bibliography of other articles which refer to the typology of sex work in India

Reference	Typology	Criterion
<b>India</b>		
Venkataramana & Sarada (2001)	Brothel-based FSWs, 'family girls', call girls, highway-based FSWs, bar girls, 'recording dance' FSWs	Unspecified
(Hawkes & Santhya, 2002)	Quotes NACO (1997) typology: brothel-based, home-based and part time, street-based, call girls	Unspecified
<b>South India</b>		
Chandrasekaran et al. (2006)	Street-based, lodge-based, brothel-based, home-based and other Also mention cell phone-based and bar-based sex workers	Place of solicitation
<b>Tamil Nadu</b>		
(Amin, 2004)	'Family girls' or 'housewives', street-based, migrant, brothel-based, highway-based FSWs	Unspecified
<b>Chennai, Tamil Nadu</b>		
Panchanadeswaran et al. (2008)	Brothel-based, street-based FSWs	Unspecified
<b>Karnataka</b>		
Blanchard et al. (2005)	Home-based, brothel-based, lodge-based, public places, highway-based, <i>dhaba</i> -based	Place of sex

Reference	Typology	Criterion
	FSWs	
Halli et al. (2006)	Home-based, brothel-based, lodge-based, roadside-based, <i>dhaba</i> -based FSWs	Place of sex work
Ramesh et al. (2006)	Street-based, lodge-based, home-based, brothel-based, <i>dhaba</i> -based FSWs, other	Unspecified
<b><i>Maharashtra</i></b>		
Family Health International (2001a, 2001b)	Brothel-based, non-brothel-based FSWs (including street-based and bar-based FSWs)	Unspecified
Amin (2004)	Brothel-based, non-brothel-based FSWs	Unspecified
<b><i>Pune, Maharashtra</i></b>		
Brahme et al. (2006)	FSWs residing in brothels, floating FSWs	Unspecified
<b><i>Sangli, Maharashtra</i></b>		
Pillai et al. (2008)	<i>Devadasis</i> , housewives who sell sex, FSWs who work in brothels, streetwalkers, <i>kothis</i> (male sex workers)	Unspecified
<b><i>Andhra Pradesh</i></b>		
Dandona L et al. (2005)	Street-based, home-based, brothel-based FSWs	Unspecified
<b><i>Kottayam, Kerala</i></b>		
Chathukulam & John (2002)	Street-based FSWs, FSWs operating from lodges, houses, parked vehicles, casual FSWs, high-profile FSWs	Unspecified
<b><i>Kolkata, West Bengal</i></b>		
Gangopadhyay et al. (2005), Kumar (1998), Sarkar et al. (2005)	Brothel-based, ‘floating’ FSWs	Unspecified
Evans & Lambert (1997)	Independent FSWs, FSWs working under the control of brothel madams and pimps	Unspecified
(I. Basu et al., 2004)	Street-based, work and/or live in brothels FSWs who work for self, FSWs who work as <i>adhyias</i> or <i>chukris</i>	Unspecified Contractual agreement

### 2.1.3. Discussion

I have reviewed the literature on female sex work in India and identified a multitude of typologies that have been employed either at a national, state or city level. The review has provided information about the various categories of female sex workers documented in India and the different criteria employed to classify sex workers.

Previous studies have mentioned various criteria to distinguish between types of FSWs: practice (Raghuramaiah, 1991 quoted by Chattopadhyay & McKaig, 2004), mode of

operation (National AIDS Control Organization, 1997), mode of organisation (Cornish, 2004), nature of the sex work network (Singh et al., 2005), place of sex work (Halli et al., 2006), place of sex (Blanchard et al., 2005), primary place of solicitation (Chandrasekaran et al., 2006; Isac et al., 2007; Karnataka Health Promotion Trust, 2005; National AIDS Control Organization, 2007a), fee solicited from the client (Kotiswaran, 2008; UNAIDS, 2000), and labour relation between the FSW and the brothel owner/manager (Kotiswaran, 2008). The first four criteria (i.e. practice, mode of operation, mode of organisation, nature of the sex work network) can refer to various aspects of the sex work practice and/or industry. Similarly, the place of sex work can refer either to the place of solicitation or the place of sex. The remaining criteria (i.e. place of sex, place of solicitation, fee per sex contact, labour relation with the brothel owner/manager) indicate a single variable and can be operationalized. Of these, only the primary place of solicitation allows direct identification of female sex workers necessary for conducting HIV prevention activities. The National AIDS Control Organization classifies female sex workers according to their primary place of solicitation and the resulting typology is recommended for mapping and designing targeted interventions.

At a national level, classifying female sex workers based on their primary place of solicitation results in six main categories: brothel-based, home-based, street-based, lodge-based, *dhaba*-based, and highway-based FSWs. Brothel-based FSWs are contacted by clients in recognized brothels (buildings or residential homes where people from outside the sex trade know that FSWs live and work). Home-based FSWs solicit clients from their homes, through middlemen or word of mouth. Street-based FSWs solicit clients on the street or in public places such as parks, railway stations, bus stands, markets or cinema halls. Lodge-based FSWs live in lodges (small hotels) and their clients are contacted by the lodge owner, manager or employee of the lodge for a commission. *Dhaba*-based FSWs

solicit clients in *dhabas* (roadside country restaurants). Highway-based FSWs solicit clients on the highways, usually among long-distance truck drivers.

Some studies have also mentioned a few emerging ways to solicit clients. Some FSWs contact the majority of their clients through phones or cell phones, with or without the help of agents (Chandrasekaran et al., 2006; Fung et al., 2007; Nag, 2006). The increasing use of cell phones for the purpose of sex work may result in an ‘invisible’ sex work industry parallel to the ‘visible’ sex work industry. Other FSWs who solicit and practise through their place of work such as beauty/ massage parlours or bars are becoming popular in large cities in India, such as Mumbai (Family Health International 2001a; 2001b), likely due to a combination of factors, such as changing client preference and the knowledge about the high rates of HIV infection among sex workers in traditional settings. These women are often less openly working as FSWs, allowing men to ‘believe’ that these are casual partners to whom they offer some form of gratuity rather than ‘prostitutes’, which may also seem more socially acceptable. In rural areas, some women doing agricultural work also practise sex work (Blankenship et al., 2007a, 2007b; Dhopeswarkar, 2007; Hanck, 2006, 2007; Project Parivartan, 2007; West & Irwin, 2007; West et al., 2007). These women are likely to constitute a relatively hidden population of FSWs.

Very few of the selected documents actually set out to develop a typology of sex work. Only one paper discusses proposing a typology of sex work as one of its main objectives (Mukhopadhyay, 1995), however it is not clear what data were employed and how the proposed typology was developed. Other studies have proposed (Kotiswaran, 2008) or identified a typology (Asthana & Oostvogels, 1996; Bhattacharya & Senapati, 1994; Cornish, 2004; Kumar, 2003; National AIDS Control Organization, 1997) based on ethnographic and/or mapping data. Nag (2006)’s typology is based on categories of sex

workers identified by previous studies. Hence, most typologies have been developed based on mapping of FSWs, ethnographic observations of the female sex work industry and/or FSWs' reports of how the industry is organized.

The conclusions of this review are limited to the documents selected and discussed in this section, and the databases searched over the indicated time span. While I tried to also identify reports and presentations, many documents are not available online nor circulated widely in hard copy, and hence the list of the identified documents is likely not exhaustive.

In summary, the National AIDS Control Organization classifies female sex workers according to their primary place of solicitation; this allows the direct identification of female sex workers necessary for conducting HIV prevention activities once hot spots have been mapped. NACO recommends this typology for designing targeted interventions, as the place of solicitation is expected to identify high risk female sex workers. Other criteria (i.e. place of sex, fee per sex contact, labour relation with the brothel owner/manager) have also been proposed to discriminate between categories of FSWs, however this type of information needs to be obtained from the FSWs and hence requires additional contact with the women. These criteria are useful for the HIV programme provided they indicate which female sex workers are at high risk. Other information can also be asked of the FSWs; in order to identify other variables which can help indicate which FSWs are at risk, in the following section I review the literature on female sex work in India and identify risk factors for HIV which have been documented in the literature.

## **2.2. HIV risk factors in female sex work in India**

Firstly, I discuss the risk factors of HIV and other sexually transmitted infections among female sex workers in India (section 2.2.1). As sexually transmitted infections can be

prevented by consistently using condoms, identifying the risk factors of inconsistent condom use helps us understand the risk factors of HIV and other sexually transmitted infections. Section 2.2.2 discusses the literature on the risk factors of inconsistent condom use among female sex workers in India.

I searched the following databases: Medline, Pubmed, PsycInfo, Web of Science, Embase, Cinahl Plus, IBSS, Scopus, Jstor (within the following disciplines: Anthropology, Health Policy, Health Sciences, Psychology, Sociology), using the search words [(‘sex work’ OR ‘prostitution’ OR ‘sex worker’ OR ‘prostitute’) AND ‘India’]. The search was conducted in June 2010, was limited to materials published in English since 1986 (when the first case of HIV was identified in India) and resulted in 8660 items. After removing duplicates, the list was reduced to 7229 items. Firstly, most studies were excluded after inspecting their title because they did not examine female sex work and/or were not set in India. Secondly, additional articles were excluded because of the same reasons after examining the abstract. Thirdly, after examining the text of the remaining articles, I excluded the ones which did not focus on risk factors of HIV status, STI status or inconsistent condom use among female sex workers in India. After this process, 24 papers using quantitative or qualitative methodology that examined the risk factors of HIV/STI prevalence or inconsistent condom use were selected and are discussed in this section.

### 2.2.1. Risk factors of HIV and sexually transmitted infections

Table 2.5 presents information about the date of data collection, sample size, and geographic area of the studies which examined risk factors of HIV and/or sexually transmitted infections among female sex workers in India, in the order in which they are discussed in this section. All the studies employed survey data and quantitative methodology. I organised the studies by state and also tried to first discuss the studies which examined risk factors of HIV seropositive status, followed by those which discussed risk factors of both HIV and sexually transmitted infections. Consequently, one of the studies conducted in Maharashtra state (Bhave et al., 1995) is discussed later in the section, with the other studies which examined risk factors of both HIV and STI status.

Table 2.5. Date of data collection, sample size and geographic area of studies which examined risk factors of HIV and/or sexually transmitted infections among female sex workers in India

Reference	Date of data collection	Sample size	Geographic area	Outcome variable
Simoes et al. (1993)	1986-1990	412	6 localities in Tamil Nadu	HIV
Agarwal et al. (1999)*	-	100	Moreh, Manipur	HIV
Brahme et al. (2006)	1993-2002	1359	Pune, Maharashtra	HIV
Silverman et al. (2006)	2002-2005	175	Mumbai, Maharashtra	HIV
Sarkar et al. (2008)	2006	580	West Bengal	HIV
Sarkar et al. (2005)	2004	362	Kolkata, West Bengal	HIV
Sarkar et al. (2006)	2004	558	West Bengal	HIV
Shahmanesh et al. (2009)	2004-2005	326	Goa	HIV, STI
Bhave et al. (1995)*	-	541	Mumbai, Maharashtra	HIV, STI
Reza-Paul et al. (2008)	2004 and 2006	854	Mysore, Karnataka	HIV, STI
Ramesh et al. (2010)	2004-2009	4712	Karnataka	HIV, STI
Mishra et al. (2009)	2004-2006	2312	Karnataka	Syphilis
Ramesh et al. (2008)	2004-2006	10096	Karnataka, Maharashtra, Andhra Pradesh, Tamil Nadu	HIV

\* Only abstract available

One of the first studies which explored the risk factors of HIV infection among female sex workers was conducted in Tamil Nadu (Simoes et al., 1993). Following the detection of HIV among sex workers from Chennai, Tamil Nadu in 1986 (Simoes et al., 1987), the same authors surveyed female sex workers from remand homes (where they were incarcerated under charges of prostitution) in three cities and three large towns in Tamil Nadu. In addition to a cross-sectional survey of the sex workers incarcerated in the six remand homes in early 1986, all new sex workers entering the homes between 1986 and 1990 were screened for the study. Overall, 412 sex workers were interviewed and tested for HIV and 3.4% of them were found HIV positive. The study showed higher HIV prevalence in the port city of Chennai (10% vs. maximum 3.3% in other cities) and among the sex workers who had been exposed to foreigners, suggesting the probable point of entry of the virus into the area. Moreover, higher HIV prevalence was registered among women doing sex work for less than 2 years although the reasons for this were not discussed.

Agarwal et al. (1999) conducted a study examining the HIV prevalence of female sex workers in Moreh, Manipur state. Within a sample of 100 women, 12% tested positive for HIV infection. HIV positive women had more clients per day and had been in sex work longer. HIV prevalence among sex workers who were injecting drug users was significantly higher than among their counterparts.

A cohort study was conducted in Pune, Maharashtra state, in order to identify correlates of HIV infection among female sex workers attending sexually transmitted infection clinics between 1993 and 2002 (Brahme et al., 2006). Overall, 1359 female sex workers were enrolled in the study over the 10 years and 54% of them were HIV positive (ranging between 46% in 1993 and 50% in 2002). Female sex workers who had never been married or were widowed were more likely to be HIV positive compared to married women. While consistent condom use was not associated with HIV infection in the

multivariate analysis, women who reported using condoms inconsistently were more likely to be infected with HIV compared to those who reported never using condoms. Diagnoses of genital ulcers or genital warts were also positively associated with HIV infection. The authors also examined the relationship between HIV seropositivity and age, education, age at first sex, number of lifetime sexual partners, history of genital ulcers, genital discharge and genital warts, diagnosis of genital discharge, gonorrhoea and syphilis; none of these factors were independently associated with HIV infection.

A couple of studies have been conducted among women who had been trafficked into sex work. Silverman et al. (2006) examined the HIV prevalence and its predictors among 175 sex-trafficked women rescued from Mumbai brothels between 2002 and 2005. The study showed that 23% of the women tested positive for HIV. Women trafficked from the states of Karnataka and Maharashtra were more likely to be HIV positive than those trafficked from other Indian states. HIV positive women had been trafficked at slightly younger ages than HIV negative women and had been practising sex work in brothels longer. No variations in HIV seropositive status were observed depending on nationality, marital status or number of clients per day.

A cross-sectional study was conducted in 2006 in order to understand the interplay of sex-trafficking, violence and HIV infection among brothel-based sex workers from West Bengal (Sarkar et al., 2008). Out of the 580 study participants, 12% tested positive for HIV infection. Of note, 43% of the sex workers from Nepal (representing 9% of the sample) were HIV positive. Sex workers aged 20 years or less were overrepresented among the HIV positive women and had significantly more clients per day compared to sex workers from other age groups. Study participants who tested positive for HIV were more likely to have been trafficked into sex work, to have faced physical and sexual violence after entering sex

work, and to have been forced to have sex in the initial stage of sex work. Sexual violence was also significantly associated with HIV infection at the multivariate level.

In 2004, Sarkar et al. (2005) conducted a cross-sectional study among brothel-based sex workers from Kolkata, West Bengal state to assess the HIV prevalence among this population. Out of 622 sex workers who were tested for HIV, 362 were also interviewed regarding their sexual behaviour and practices. Of the 622 sex workers 9.6% tested positive for HIV. HIV prevalence was significantly higher among sex workers aged 16 to 20 years (28%). No associations were found between HIV infection and literacy status, marital status, duration in sex work, number of clients per day, consistent condom use status, or place of entertaining clients (brothels vs. hotels/ other places).

Similar findings were reported by the same authors regarding a larger study conducted in six districts of West Bengal in 2004 (Sarkar et al., 2006). A total of 2,076 women practising sex work in brothels were tested for HIV and 558 of them were also interviewed using a questionnaire. Prevalence of HIV was 5.9% and of syphilis 11.6%. However, 12.5% of sex workers aged 20 years or less tested positive for HIV. Women who reported a sexually transmitted infection in the previous year were more likely to be HIV positive compared to their counterparts. No associations were observed between HIV infection and literacy status, income, client volume, duration in sex work, place of entertaining clients, or consistency of condom use.

Shahmanesh et al. (2009) conducted a cross-sectional study among female sex workers from Goa state in order to assess the prevalence and determinants of HIV and sexually transmitted infections (Chlamydia, gonorrhoea, or trichomonas) among this population. Out of the 326 sex workers recruited using respondent-driven sampling, 25.7% tested positive for HIV and 22% for at least one of the three above-mentioned sexually transmitted infections. HIV positive sex workers were more likely to be Hindu, recently

arrived in Goa, to practise sex work in brothels and lodges, to report painful urination, and to have social support and less likely to have an intimate partner. Sexually transmitted infections were associated with Goan ethnicity, young age, lack of schooling, not having an intimate partner, no financial autonomy, deliberate self-harm, sexual abuse, having regular customers, practising sex work on the streets, and being asymptomatic. Sex workers who had knowledge about HIV and access to free services for sexually transmitted infections were less likely to test positive for Chlamydia, gonorrhoea, or trichomonas.

Bhave et al. (1995) developed and tested an HIV intervention targeting sex workers and madams in the brothels of Mumbai, Maharashtra state. The study recruited 334 sex workers and 20 madams from an intervention site, where the participants underwent a 6-month program of educational videos, small group discussions and pictorial educational materials and where free condoms were distributed. In addition, a control group of 207 sex workers and 17 madams who had not been exposed to the intervention was also recruited into the study. All sex workers were tested for antibodies to HIV and syphilis before and after the intervention. Both groups were followed for approximately one year. The HIV baseline prevalence was 47% in the intervention group and 41% in the control group. The study showed a significantly higher incidence of HIV and syphilis and lower reported condom use in the control group compared to the intervention group, indicating a positive effect of the intervention.

Data from two cross-sectional surveys were employed to assess the impact on sexual behaviours and sexually transmitted infections of an intervention programme among female sex workers in Mysore district of Karnataka state (Reza-Paul et al., 2008). The surveys were conducted 30 months apart (in 2004 and 2006) and enrolled 429 sex workers at baseline and 425 at follow-up. In addition to substantial increases in reported condom use, the study indicates a significant decline in sexually transmitted infections between the

two survey rounds (syphilis 25% vs. 12%, trichomonas 33% vs. 14%, Chlamydia 11% vs. 5%, gonorrhoea 5% vs. 2%). HIV prevalence remained stable (26% vs. 24%), however detuned assay testing suggested a decline in recent HIV infections.

Similar findings were reported from a larger study using data from two cross-sectional surveys conducted among female sex workers from five districts in Karnataka state (including the data from Mysore district employed in the above-mentioned study) (Ramesh et al., 2010). The follow-up surveys were conducted 28 to 37 months after the baseline; 2312 sex workers were recruited at baseline and 2400 at follow-up. The study indicates reductions in the prevalence of HIV (20% vs. 16%), high-titre syphilis (6% vs. 3%), and chlamydia and/or gonorrhoea (9% vs. 7%) and an increase in reported condom use. Sex workers soliciting clients in brothels had a significantly higher prevalence of HIV and sexually transmitted infections compared to women soliciting clients in public places or in their own homes. Results of these two studies conducted in Karnataka suggest a positive impact of the intervention programme on sexual behaviour and sexually transmitted infections.

The baseline data from this survey conducted in five districts of Karnataka state were also employed to examine the determinants of syphilis among female sex workers (Mishra et al., 2009). Out of the 2312 sex workers recruited for the study, 10% had active syphilis and 25% lifetime syphilis. Sex workers were more likely to have had syphilis in their lifetime if they were older, illiterate, had a higher client volume, had been practising sex work longer and in more than one city, and were soliciting clients in public places and entertaining them in brothels or lodges. Illiteracy, being widowed/divorced/deserted, higher client volume, and soliciting clients in public places followed by sex in brothels or lodges were significant predictors of active syphilis.

Cross-sectional biological and behavioural survey data collected from 23 districts across four states in South India (Karnataka, Maharashtra, Andhra Pradesh, Tamil Nadu) were employed to examine the determinants of HIV prevalence among female sex workers (Ramesh et al., 2008). Overall, 10,096 sex workers participated in the study and 14.5% of them tested positive for HIV (ranging from 2% to 38% depending on the district). In terms of their socio-demographic profile, sex workers were more likely to be HIV positive if they were over 25 years old, unmarried, widowed/divorced/separated or *Devadasi*, illiterate, and had no other source of income other than sex work. No associations were observed between HIV infection and the residency status or their experience of migration for sex work. Study participants who had their sexual debut below the age of 15 years, started sex work before the age of 20 years, were doing sex work for 5 years or more, had 10 or more clients per week, and solicited clients in brothels or public places were more likely to be HIV positive compared to their counterparts. The study also examined factors associated with district-level variations in HIV prevalence among sex workers.

In summary, the existing literature on female sex work in India has identified numerous risk factors of HIV infection. In the initial stage of the epidemic, a sex worker was at higher risk for HIV infection if she worked in a port and had sex with foreigners (Simoes et al., 1993). Sex workers in India have a different HIV prevalence depending on a number of socio-demographic characteristics: age (Ramesh et al., 2008; Sarkar et al., 2008; Sarkar et al., 2005; Sarkar et al., 2006), religion (Shahmanesh et al., 2009), literacy (Ramesh et al., 2008), marital status (Brahme et al., 2006; Ramesh et al., 2008), having an intimate partner (Shahmanesh et al., 2009), period of migration (Shahmanesh et al., 2009), having another source of income besides sex work (Ramesh et al., 2008), and age at sexual debut (Ramesh et al., 2008). Moreover, HIV prevalence varies depending on various sex work-related factors: age at entry into sex work (Ramesh et al., 2008; Silverman et al.,

2006), having been trafficked into sex work (Sarkar et al., 2008), experiencing physical violence, sexual violence or forced sex upon entry into sex work (Sarkar et al., 2008), duration in sex work (Agarwal et al., 1999; Ramesh et al., 2008; Silverman et al., 2006; Simoes et al., 1993), place of soliciting clients (Ramesh et al., 2010; Ramesh et al., 2008), type of sex work (Shahmanesh et al., 2009), and the number of clients (Agarwal et al., 1999; Ramesh et al., 2008). Reported sexually transmitted infections in the previous year (Sarkar et al., 2006) or painful urination (Shahmanesh et al., 2009) and diagnosed genital ulcers or warts (Brahme, Mehta, Sahay, Joglekar, Ghate, Joshi, Gangakhedkar, Risbud, Bollinger, & Mehendale, 2006b) were also shown to increase the risk for HIV infection, as did injecting drug use (Agarwal et al., 1999). Condom use (Brahme, Mehta, Sahay, Joglekar, Ghate, Joshi, Gangakhedkar, Risbud, Bollinger, & Mehendale, 2006b), social support (Shahmanesh et al., 2009) and exposure to HIV intervention programmes (Bhave et al., 1995; Ramesh et al., 2010) were shown to have a protective effect on HIV infection among sex workers.

A number of risk factors were identified for sexually transmitted infections. Sex workers have a different risk of infection depending on their age (Mishra et al., 2009; Shahmanesh et al., 2009), ethnicity (Shahmanesh et al., 2009), education (Mishra et al., 2009; Shahmanesh et al., 2009), marital status (Mishra et al., 2009), whether they have an intimate partner (Shahmanesh et al., 2009), or are autonomous financially (Shahmanesh et al., 2009). Moreover, their risk varies depending on the duration in sex work (Mishra et al., 2009), whether they have regular clients (Shahmanesh et al., 2009), the place where they solicit clients (Ramesh et al., 2010), the type of sex work practised (Mishra et al., 2009; Shahmanesh et al., 2009), whether they practise sex work in more than one city (Mishra et al., 2009), their number of clients (Mishra et al., 2009), and whether they experience sexual abuse (Shahmanesh et al., 2009). Sex workers who do not have symptoms of sexually

transmitted infections and have tried to harm themselves were more likely to be infected (Shahmanesh et al., 2009). Sex workers who have knowledge about HIV/AIDS (Shahmanesh et al., 2009), have access to free treatment services (Shahmanesh et al., 2009) and are exposed to HIV intervention programmes (Bhave et al., 1995; Ramesh et al., 2010; Reza-Paul et al., 2008) are less likely to test positive for sexually transmitted infections.

### 2.2.2. Risk factors of inconsistent condom use

Table 2.6 presents information about the date of data collection, methodology, sample size and geographic area of the studies which examined risk factors of inconsistent condom use among female sex workers in India. While the geographical area of the study was taken into account in deciding the order of the studies, the studies were organised mainly by major risk factors (alcohol consumption, physical and sexual violence, HIV programme exposure, membership to sex workers' collectives).

Table 2.6. Date of data collection, sample size and geographic area of studies which examined risk factors of inconsistent condom use among female sex workers in India

Reference	Date of data collection	Methodology	Sample size	Geographic area
Dandona et al. (2005)	2003-2004	Quantitative	6648	Andhra Pradesh
Samet et al. (2010)	2008-2009	Quantitative	416	Mumbai, Maharashtra
Madhivanan et al. (2005)	2002-2003	Quantitative	1741	Mumbai, Maharashtra
Rodríguez et al. (2010)	Unspecified	Qualitative	101	Andhra Pradesh & Kerala
Panchanadeswaran et al. (2008)	2004	Qualitative	49	Chennai, Tamil Nadu
Karandikar & Próspero (2010)	2006	Qualitative	10	Mumbai, Maharashtra
Ramakrishnan et al. (2010)	2005-2007	Quantitative	9667	Karnataka, Maharashtra, Andhra Pradesh, Tamil Nadu
Halli et al. (2006)	2002	Quantitative	1512	Karnataka
Ghose et al. (2008)	2005	Qualitative	46	Kolkata, West Bengal
Evans & Lambert	1995-1997	Qualitative	61 & focus	Kolkata, West Bengal

Reference	Date of data collection	Methodology	Sample size	Geographic area
(2008) Blankenship et al. (2008)	2006	Quantitative	812 groups	East Godavari, Andhra Pradesh

Data collected in 2003-2004 among female sex workers from 13 districts in Andhra Pradesh state were employed to assess the level of condom use in this population and its predictors (Dandona et al., 2005). Of the 6,648 sex workers who participated in the survey, 93% had penetrative vaginal/anal sex with at least one client in the last 15 days and 47% of them reported not having used condom with at least one of her last three clients. Sex workers were less likely to use condoms with their clients if they did not know that HIV could be prevented, did not have access to free condoms, were practising sex work in public places rather than in brothels, and were not members of sex workers' collectives. Similarly, illiterate, over 24 years old women, who had low social support, low income, and lived in medium-size urban or rural areas were less likely to use condoms with their clients. Moreover, 94% of sex workers did not use condoms at last sex with their regular sex partners.

Alcohol consumption is an important risk factor of inconsistent condom use, as sex workers are less likely to use condoms when they and/or their clients consume alcoholic beverages before or during sex. Samet et al. (2010) examined the relationship between alcohol consumption and condom use among a sample of 211 HIV positive female sex workers and 205 HIV positive clients of sex workers from Mumbai, Maharashtra state. The study showed that 38% of sex workers and 62% of their clients drank alcohol in the 30 days prior to the survey; 32% of the women drank heavily and 11% of them were dependent to alcohol; the respective percentages among men were 44% and 29%. Female sex workers were more likely to be heavy drinkers if they were younger and reported better

physical health. No significant association was observed between heavy drinking among female sex workers and inconsistent condom use within the last 3 months or the last year prior to the survey. Younger sex workers were less likely to use condoms in the last 3 months and unmarried status was associated with inconsistent condom use in the last year. The results were different for the clients, as heavy drinkers were more likely to not use condoms consistently. Unlike young women, younger men were more likely to use condoms.

Madhivanan et al. (2005) examined whether men under the influence of alcohol when visiting female sex workers were at greater risk for sexually transmitted infections and HIV. The study employed 2002/2003 cross-sectional baseline data from a randomized controlled trial conducted among high-risk men in Mumbai. Out of 1741 men enrolled in the study, 14% tested positive for HIV and 60% for sexually transmitted infections (primary syphilis, secondary or latent syphilis, incident, recurrent or chronic HSV2, chancroid, gonorrhoea, Chlamydia, nongonoccal urethritis, LGV, *C acuminata*, or *M contagiosum*). Most study participants visited female sex workers (92%) and 66% and 57% of them had sex under the influence of alcohol in their lifetime or in the last 3 months respectively. Men who visited sex workers under the influence of alcohol and those who reported unprotected sex were more likely to have a sexually transmitted infection or HIV. Sex under the influence of alcohol was associated with having sex with more than ten sex workers and unprotected sex (lifetime and in the last 3 months) and lifetime anal sex.

Rodríguez et al. (2010) conducted a qualitative study in order to examine the role of alcohol consumption in risky sexual behaviour among male migrant workers and female sex workers from Chirala, Andhra Pradesh state and Calicut, Kerala state. Interviews were conducted with 38 male migrant workers and 63 female sex workers from both locations. Most men reported drinking before visiting sex workers because it gives them courage and

helps them last longer during sex and to reduce feelings of loneliness and isolation. Many sex workers avoided drinking alcoholic beverages prior to sex in order to stay alert and reduce the risk of violence. When the men were under the influence of alcohol, they tended to request non-traditional sex, to get violent or aggressive, and were less likely to use condoms.

Physical and sexual violence is another important risk factor of inconsistent condom use, as sex workers are less likely to use condoms when threatened. In 2004, Panchanadeswaran et al. (2008) conducted an ethnographic study aiming at understanding the interplay of violence from clients and intimate partners, alcohol consumption and condom use among street-based female sex workers from Chennai, Tamil Nadu state. Data were collected among 49 sex workers through in-depth interviews and focus group discussions. Study participants experienced emotional, verbal, physical and sexual violence from their intimate partners. Clients or potential clients (on the streets) were also abusive with the women. While under the influence of alcohol, clients were more prone to be violent, both physically and sexually. Sexual violence and forced group sex made condom negotiation and condom use very problematic. Women reported difficulty in negotiating condom use with their intimate partners. In order to avoid possible violence, sex workers adopted various strategies, such as collecting the payment in advance, not confronting clients who they thought might become violent if challenged or encouraging them to get drunk, getting the help of other sex workers, or reasoning with the clients.

Karandikar and Próspero (2010) explored the violence experienced by sex workers from their intimate partners in the context of brothel-based sex workers from Mumbai, Maharashtra state. The data, collected in 2006, consisted of 10 in-depth interviews with female sex workers. In the case of the women who had intimate partners, the partners started off as clients who then became regular clients and then intimate partners – either

voluntarily or not (as a result of the regular clients' threats of violence). Many of the intimate partners relied on the sex workers' money for their income. Once they became the sex workers' pimps, the intimate partners became physically, emotionally, and sexually violent and economically exploitative with the women. Much of the violence was due to the difficulties posed by being both intimate partners and pimps.

As discussed in section 2.2.1, in some settings sex workers' exposure to various HIV intervention programmes has resulted in increased condom use and decreased prevalence of sexually transmitted infections (Bhave et al., 1995; Ramesh et al., 2010; Reza-Paul et al., 2008). Ramakrishnan et al. (2010) evaluated Avahan programme's coverage of female sex workers and its intermediate outcomes using data from two rounds of the Integrated Behavioral and Biological Assessment survey conducted in 22 districts in South India. Programme exposure was 75% in Solo districts (where Avahan was the sole service provider covering all sex workers) and 66% in Minor districts (where Avahan was not the sole provider and intended coverage was less than 50% of sex workers). Sex workers from Solo districts were more likely to be exposed to the programme compared with sex workers from Minor districts. Sex workers who were exposed to the programme in the Solo districts were more likely to have correct knowledge about condom use, to report they used condoms consistently with occasional and regular clients, and to have sought treatment for sexually transmitted infections.

Some HIV intervention programmes have made efforts to help sex workers develop collectives. Becoming a member of a collective and participating in its activities seems to have a positive effect on increasing condom use. In 2002, a study was conducted in order to assess the role of sex worker collectives in increasing knowledge about HIV/AIDS and condom use (Halli et al., 2006). A total of 1,512 sex workers from 18 districts of Karnataka state were recruited into the study. Low, medium and high collectivization was defined

based on women's membership to collectives and whether they had contact with a peer educator in the previous year. High collectivization was associated with increased knowledge about HIV/AIDS and higher reported condom use. Women reported higher condom use with clients than with intimate partners. An increase was observed in most outcome variables measuring reported condom use and knowledge about HIV/AIDS between low, medium and high collectivization. Literate, younger women who practise sex work in lodges or brothels were more likely to use condoms regularly with commercial clients compared to their counterparts.

Ghose et al. (2008) conducted a qualitative study in order to understand how members of the Sonagachi Project (community-led structural intervention among sex workers from Kolkata, West Bengal state) mobilize collective identity and how collective identity influences condom use. Data consisted of interviews with 46 staff members of the sex workers' collective (36 female sex workers and 10 non-sex workers). Study participants mobilized collective identity by (1) building boundaries demarcating in-group sex workers from out-group members, (2) raising consciousness about sex work as legitimate labour and the change associated with program participation, and (3) negotiating identity with out-group members. The study examined the link between collective identity mobilization and condom use and showed that condoms mark boundaries, enunciate the consciousness that sex with clients is legitimate labour, and help negotiate the identity of sex workers in interactions with clients.

Evans and Lambert (2008) conducted an ethnographic study in Kolkata, West Bengal (the area covered by the Sonagachi Project) in order to assess how appropriate individual, social/group and structural theories of health behaviour are when applied to HIV prevention initiatives. Data consisted of semi-structured narrative interviews with 61 sex workers, four focus group discussions with peer educators, three focus group

discussions with project supervisors, and interviews with senior project managers. The study provided evidence that sex workers' decisions to use condoms or not were the result of complex inter-connected interpersonal, group and structural characteristics. However, sexual behaviours were shown to be most strongly influenced by structural forces, such as the power relations existing within the sex work industry, macro-level political economy, societal norms, and gender dynamics.

Data from a cross-sectional survey of 812 sex workers from East Godavari district, Andhra Pradesh state, recruited in 2006 through respondent-driven sampling, were employed to examine the relationship between power, exposure to a community mobilization intervention, and condom use (Blankenship et al., 2008). The authors distinguished between three types of power – collective power, control over work, and economic power, and three dimensions of collective power – collective identity, efficacy, and agency. The study shows that sex workers who had control over the type of sex they practised and the amount charged, who were economically independent, and exposed to the intervention programme were more likely to use condoms consistently.

To sum up, researchers have identified various risk factors of inconsistent condom use among female sex workers in India. Consistent condom use varies depending on a number of socio-demographic characteristics, such as age (Dandona et al., 2005; Halli et al., 2006; Samet et al., 2010), marital status (Samet et al., 2010), literacy (Dandona et al., 2005; Halli et al., 2006), income (Dandona et al., 2005), and the place of residence (Dandona et al., 2005). Sex workers choose to use condoms consistently or not depending on the sexual partner (occasional client, regular client, intimate partner) (Halli et al., 2006; Ramesh et al., 2010). Sex work-related factors which affect consistent condom use are the place of solicitation (Dandona et al., 2005), the place of sex (Halli et al., 2006), the extent of alcohol consumption among sex workers and their clients (Rodriguez et al., 2010;

Panchanadeswaran et al., 2008), and the prevalence of physical violence, sexual violence and forced group sex (Panchanadeswaran et al., 2008). In addition, safe sex practices are influenced by the power dynamics existing within the sex work industry (Evans & Lambert, 2008); sex workers are more likely to use condoms consistently when they are independent financially and have control over the type of sex and the amount charged (Blankenship et al., 2008). Sex workers are more likely to practise safe sex when they have access to condoms (Dandona et al., 2005), have knowledge about HIV/AIDS (Dandona et al., 2005), are exposed to HIV intervention programmes (Blankenship et al., 2008; Ramakrishnan et al., 2010; Ramesh et al., 2010; Reza-Paul et al., 2008), are members of sex worker collectives (Dandona et al., 2005; Ghose et al., 2008; Halli et al., 2006) and have social support (Dandona et al., 2005).

### **2.3. Developing a typology**

As shown in section 2.1, most typologies of female sex work in India have been developed based on ethnographic and/or mapping data; of note, none of the typologies were developed using quantitative data. In this section an attempt is made to discuss various methods that have been employed to develop typologies. Due to the scarcity of studies that developed typologies of sex work in India, I examined studies which developed typologies in the medical field more generally.

Books about classification and clustering methods were identified by searching the University College London library using the search word 'classification'. Subsequently, online tutorials about each method used to develop typologies were identified by searching each method on Google. Lastly, the studies provided as examples in this section were identified by searching for articles in Medline database using the search word 'typology' and choosing two papers for each method.

I discuss a number of approaches to developing typologies. I distinguish between theoretical *a priori* typologies and empirical typologies. *A priori* typologies are usually proposed when there is little research available in a certain area. In terms of empirical typologies, researchers use qualitative or quantitative methodologies, depending on the topic researched. There are two broad classes of quantitative methods: clustering methods (e.g. exploratory factor analysis, cluster analysis, latent factor analysis) and classification methods (e.g. discriminant analysis, classification and regression trees analysis, logistic regression analysis). The decision to use a certain method for typology development depends on the objective of the study and the available data.

### **2.3.1. *A priori* typologies**

Some typologies are proposed *a priori* and without being ‘tested’ empirically. For example, Green et al., (2009) discussed a framework of sexual partnerships, to inform HIV behavioural interventions in Africa. In this context, they proposed a typology of sexual partnerships corresponding to varying levels of HIV risk. They distinguished between long-term mutually monogamous partnerships; serial mutually monogamous partnerships; regular partnerships, with one or both partners having occasional casual partners; regular partnerships, with one or both partners having regular concurrent partners when this pattern is not common in the wider society; and regular partnerships, with one or both partners having regular concurrent partners when this pattern is common in the wider society. However, the authors did not do any further work to test the utility of this typology in practice, nor did they explore whether in reality the partnership types they proposed corresponded to varying levels of HIV risk.

Some researchers propose a typology *a priori* and then use it empirically. For example, Miller et al. (1997) classified adolescent sexual behaviour into five categories:

delayers (never had penile-vaginal intercourse and have less than 50 percent likelihood to engage in it during the next year), anticipators (never had penile-vaginal intercourse, but have 50 percent or greater likelihood to engage in it), one-timers (had penile-vaginal sex once), steadies (had penile-vaginal sex more than once, but with the same partner), and multiples (had penile-vaginal sex more than once and with more than one partner). The proposed typology was then used to categorise young people in further analyses using quantitative survey data. Hence, the typology was imposed on the data and the extent to which it fitted was reported.

### **2.3.2. Empirical typologies**

While some typologies are proposed *a priori*, others are developed based on empirical data. I provide examples below of studies which developed typologies using qualitative data and by analysing quantitative data using various statistical methods.

#### **2.3.2.1. Developing typologies using qualitative data**

Typologies can be developed based on data collected qualitatively using a variety of techniques. An example of this approach is a study by Serovich et al. (2005) which sought to understand the methods that HIV positive men who have sex with men use to disclose their serostatus to casual sexual partners. Based on 57 in-depth interviews with HIV positive men who have sex with men from a large Midwestern city, the authors identified a typology of disclosure strategies: point-blank (overt disclosure), stage setting (providing cues that one is HIV positive, culminating in overt disclosure e.g. verbal hinting, symbolic hinting, listing one's HIV status on an online profile, asking a partner about his HIV status first, insisting on condom usage), indirect (providing cues, without explicit disclosure), buffering (using a third party – person, thing, event – to facilitate the disclosure), and

seeking similars (positioning in environments where other HIV positive persons or those sympathetic towards them could be found).

The same qualitative data were employed to develop a typology of the methods that HIV-positive men who have sex with men use to initiate safe sex with casual partners (Serovich et al., 2009). Four main strategies were identified, depending on the degree of explicitness and the involvement of the partner: 1) having a non-negotiable safe sex policy, 2) behaviourally controlling the interaction (by refraining from ejaculating, not penetrating, engaging in less risky sex, using condoms during risky sexual activities, stopping sexual activity, putting condoms on self or partner, protecting self only, and having supplies ready), 3) being verbally direct (by using ultimatums, insisting on safe sex, requesting safe sex, disclosing serostatus, or discussing safe sex options or sexual history), and 4) being verbally indirect (hinting). HIV positive men who have sex with men would sometimes use more than one strategy to ensure they are engaging in safe sex. This typology emerged from the interview data which were analysed using an inductive approach in order to develop coding categories and interpret the data.

#### **2.3.2.2. Developing typologies using quantitative data**

Various statistical techniques can be employed to develop typologies. In the context of biological research, Fielding (2007) distinguishes between two broad categories of methods: clustering and classification methods. While both techniques place objects into groups or classes, when using a clustering method the classes are not predefined, while classification methods place objects into known groups. In other words, when using classification methods one needs to specify the groups of interest (e.g. the categories of the typology) and the analysis consists of determining class membership. For example, given a known outcome which can be categorised into low, medium and high, classification

methods can be used to identify what type of people can be considered to be low, medium or high. In contrast, in the case of clustering methods, groups are determined based on the ‘natural’ clustering of the data; as a result of the analysis, clusters of variables or cases are proposed which need to be interpreted (based on the variables used to create the clusters), a process which is not always straightforward.

#### **2.3.2.2.1. Developing typologies using clustering methods**

I discuss the following clustering techniques used in typology development: exploratory factor analysis, cluster analysis and latent class analysis.

Exploratory factor analysis is a statistical technique used to identify a relatively small number of factors that explain observed correlations among variables (Pett, Lackey, & Sullivan, 2003). A factor represents a specific underlying dimension of a construct which is as distinct as possible from the other factors included in the solution. Observed variables are linear combinations of the underlying and unique factors which are estimated:

$$X_1 = b_1F_1 + b_2F_2 + \dots + e_1$$

where x=variable, F=factor, b=factor loadings, e=unique factor

The basic assumption of exploratory factor analysis is that the underlying dimensions (factors) are responsible for the observed correlations among the observed variables and the goal is to identify a small number of easily interpretable factors. While exploratory factor analysis is mainly used to reduce the dimensionality of a dataset (the number of variables), it also plays a role in clustering of data and can be employed to identify ‘clusters’ within a dataset (Fielding, 2007).

This technique was used in a study conducted to develop a typology of mothers’ responses to children’s pain, which used data collected among 145 mothers of pediatric patients aged between 8 and 18 years referred for abdominal pain (Van Slyke & Walker,

2006). Factor analysis showed that the 33 items describing behaviour towards children experiencing pain could be reduced to three main types of responses: 1) Protect (protecting caretaking behaviour, by encouraging passivity); 2) Minimize (criticizing the child's pain behaviour), and 3) Encourage and Monitor (encouraging the child to engage in activities, while monitoring his/her symptoms).

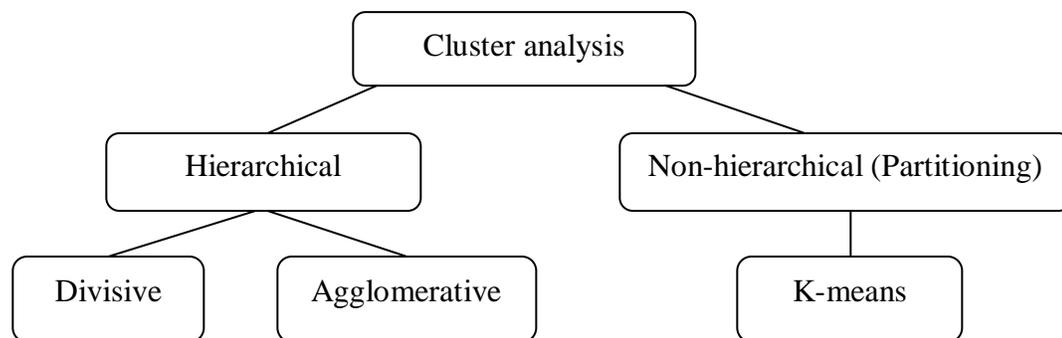
Another study which used exploratory factor analysis aimed to establish a clinical typology of alcohol dependent drinkers based on data collected among 188 patients from an alcoholic unit in Lisbon, Portugal (Cardoso et al., 2006). Results from factor analysis identified five factors (types of alcohol-dependent individuals): 1) Anxiopathic (anxious and emotionally instable); 2) Heredopathic (have familial and genetic influences on alcoholism); 3) Thimopathic (have affective symptoms); 4) Sociopathic (become disruptive under the influence of alcohol); and 5) Adictopathic (younger individuals who also consume other psychoactive substances). This typology was subsequently validated (Pombo et al., 2008).

Cluster analysis classifies a set of observations into two or more mutually exclusive unknown groups (clusters) based on the similarities between their characteristics (Stockburger, 1998). A cluster is a collection of cases that are more similar to each other than they are to cases in other clusters (Sclove, 2001). While exploratory factor analysis reduces the number of variables by grouping them into a small number of factors (uses correlation matrixes which contain similarities between variables), cluster analysis reduces the number of cases by grouping them into a smaller set of clusters (uses proximities matrixes which contain similarities between observations) (Stockburger, 1998).

Cluster analysis can be conducted using either a hierarchical or non-hierarchical approach (Fielding, 2007) (Figure 2.1). There are two major classes of hierarchical methods: 1) divisive methods (begin with one large cluster that is being split into smaller

clusters until all cases are separated); 2) agglomerative methods (start with each case as a cluster and combine them until all cases are in one cluster). Non-hierarchical (partitioning) cluster analysis uses an iterative approaches to partition the cases. For example, in k-means cluster analysis (a type of non-hierarchical cluster analysis) the researcher must specify in advance the desired number of clusters (k); initially cluster centres are chosen randomly and then each additional iteration groups observations based on the nearest Euclidean distance to the mean of the cluster (Garson, 2010). Two-stage cluster analysis combines hierarchical and non-hierarchical methods.

Figure 2.1 Types of cluster analysis



An example of the use of cluster analysis is found in a 2009 study which was conducted among a sample of 437 untreated child molesters in order to develop a psychometric typology of child molesters (Mandeville-Norden & Beech, 2009). Agglomerative hierarchical cluster analysis identified three clusters of child molesters: 1) men with low levels of self-esteem and intimacy and an inability to deal with negative emotions, 2) men showing a poor understanding of the harm caused to their victims, and 3) men who had global offense-specific and socio-affective problems.

Another example of this approach was a study which examined the decision process nurses go through before leaving their jobs (Morrell, 2005). Data collected among 153

nurses using a structured questionnaire were analysed using cluster analysis (an initial solution was obtained using hierarchical, agglomerative cluster analysis, followed by k-means clustering which enhanced the solution). The analysis identified three clusters: 1) nurses who decided to leave due to a work-related, negative shock; 2) nurses who left their jobs because of a personal, positive shock; and 3) nurses whose decision unfolded gradually.

Latent class analysis is a technique of discovering unobserved heterogeneity (latent classes) from multivariate categorical data (Hagenaars & McCutcheon, 2002). The latent classes are thought to be unobserved and are inferred from a combination of categorical indicators. Latent class analysis is basically an 'improved' version of cluster analysis (Uebersax, 2009). The main difference between the two methods is that while in cluster analysis cases are assigned to classes, in latent class analysis cases have a probability of membership for each class. Parameters are estimated for the class profiles (the description of each class) and the size of each class. As in the case of exploratory factor analysis and cluster analysis, and unlike the case of regression methods, the variables entered in a latent class analysis model are not considered to be either dependent or independent; instead, underlying groups are thought to be represented by the various patterns of the variables.

This approach was used in a study conducted to examine typologies of alcohol use among 2948 White and African American adolescent girls (Dauber et al., 2009). Latent class analysis identified different typologies for the two groups of participants: four classes among the White girls (abstainers, experimenters, moderate drinkers, and heavy drinkers) and three groups among the African American girls (abstainers, experimenters, and problem drinkers).

Another study developed a typology of chronic pain patients using latent class analysis (Banta-Green et al., 2009). Three groups of patients were identified: a typical

group (who had persistent, moderate mental health and pain symptoms); an addictive behaviours group (who had elevated mental health symptoms and opioid problems, but pain similar to the typical class); and a pain dysfunction class (who had significantly higher pain interference and elevated mental health and opioid problems). Following the latent class analysis, the authors examined possible identifiers of the patient types using multinomial regression analysis.

As mentioned above, Mandeville-Norden & Beech (2009) and Morrell (2005) developed typologies using cluster analysis, while Dauber et al. (2009) and Banta-Green et al. (2009) employed latent class analysis. While the authors were correct in choosing the respective research method, they could have used either cluster analysis or latent class analysis.

#### **2.3.2.2.2. Developing typologies using classification methods**

Unlike the above-mentioned clustering techniques (exploratory factor analysis, cluster analysis, latent class analysis), classification methods place cases into known groups. In other words, while the purpose of clustering techniques was to identify groups, when using classification methods the analysis consists of determining the membership of previously-specified groups of interest. Moreover, while clustering techniques do not distinguish between independent and dependent variables, classification methods are interdependence techniques (independent and dependent variables are clearly specified). I discuss the following classification techniques: discriminant analysis, classification and regression trees, and logistic regression.

Discriminant analysis (also known as discriminant function analysis) is used to predict group membership based on a linear combination of interval variables (Stockburger, 1998):

$$D_t = b_0 + b_1x_1 + b_2x_2 + \dots$$

where  $D_t$  = predicted discriminant score for group  $t$ ,  $t$  = the number of groups differentiated by the  $t$  discriminant functions,  $x$  = independent variable,  $b$  = coefficient. The predictive discriminant scores ( $D_{it}$ ) form the basis of the decision rule used to classify the cases into the  $t$  groups (Smith, 2010).

To conduct discriminant analysis, the dependent (a categorical variable) and the independent variables (interval variables) need to be specified; the result of the analysis is a model that allows prediction of group membership when only the interval variables are known. Some have distinguished between predictive discriminant analysis (which predicts group membership on the basis of multiple predictor variables) and descriptive discriminant analysis (which describes group differences across multiple response variables) (Huberty, 1994).

If cluster analysis and latent class analysis classify unknown groups, discriminant analysis predicts membership of known groups (Stockburger, 1998). Consequently, discriminant analysis is often used in combination with cluster analysis, as a way to 'test' the validity of the results obtained from cluster analysis. For example, a study was conducted to identify a clinical typology of alcohol withdrawal (Driessen et al., 2005). Results of hierarchical cluster analysis suggested a solution of five clusters with increasing severity of alcohol withdrawal: 1) patients without symptoms; 2) patients experiencing mild or moderate vegetative symptoms; 3) patients having mild or moderate vegetative symptoms and anxiety; 4) patients experiencing disorientation and anxiety but no hallucinations; and 5) patients having vegetative and severe psychopathological symptoms, including hallucinations. Discriminant analysis using as independent variables the symptoms experienced during the first day of treatment correctly predicted 90% of the five clusters.

Another study attempted to develop and evaluate a typology of high risk youths entering a juvenile assessment centre (Dembo et al., 1996). Following preliminary hierarchical agglomerative cluster analysis, k-means cluster analysis of the youths' potential problems was used to determine cluster membership. The following four clusters have been identified: 1) youths with low levels of problems; 2) youths with moderate levels of problems; 3) youths with severe problems, especially substance use/misuse; and 4) youths with severe problems, particularly in terms of mental health and educational level. Discriminant analysis was performed to evaluate the classifying power of the proposed typology, using as independent variables demographic characteristics, dependency and delinquency referral history, substance use, mental health history, and legal infractions. The discriminant functions did not classify very well; overall, only 48% of the cases were correctly classified. The discriminant analysis indicated distinctions among the empirical clusters, but interchanged the order of clusters 3 and 4.

Classification and regression trees (CART) is a method that builds classification and regression trees in order to predict continuous dependent variables (regression) and categorical outcome variables (classification) (StatSoft Inc., 2011). CART aims to determine a set of if-then logical conditions that permit accurate prediction or classification of cases. The method grows decision trees using recursive binary partitioning; it selects the best predictor and splitting value that separates outcome cases by a criterion. All possible splits are evaluated according to their ability to improve classification; each subsequent partition can be further divided until optimal prediction accuracy is achieved while considering tree complexity. CART deliberately grows an overly large tree and then 'prunes' the tree back to select the optimal sub-tree that minimizes the misclassification cost (Breiman et al., 1984).

CART can be used in the study of typologies. Möckel et al. (2005) assessed the value of N-terminal B-type natriuretic peptide (NT-proBNP) in risk stratification in unselected emergency room patients. Results of CART showed the highest impact of NT-proBNP for identification of high-risk patients. In addition, C-reactive protein (CRP) and age were shown to be significant splits with respect to the incidence of complications/death, and CRP and haemoglobin for the intensive care therapy outcome variable. The results obtained using CART were partially confirmed by the outcome of logistic regression analyses (age, NT-proBNP and CRP were significant predictors for complications/ death, and NT-proBNP and CRP for intensive care).

Another study attempted to understand the correlates, typology and causes of interfering fatigue, using a range of statistical techniques (Sullivan et al., 2003). CART identified five main terminal nodes in predicting interfering fatigue: (1) major depression and generalized anxiety disorder, (2) major depression and major health problems, (3) major depression, high neuroticism and high parental care, (4) major depression, high neuroticism and living in a large city, and (5) major health problems and high neuroticism. These findings were largely confirmed by the results of logistic regression and multivariate adaptive regression splines.

Logistic regression predicts the probability that an event will occur. Logistic regression involves fitting to the data an equation of the form:

$$\text{logit}(p) = \log(p/(1-p)) = a + b_1x_1 + b_2x_2 + b_3x_3 + \dots$$

where p=dependent variable, x=independent variable, b=coefficient

While both discriminant analysis and logistic regression explain categorical variables, in discriminant analysis independent variables need to be interval-level and normally distributed, while in logistic regression both interval and categorical variables (entered as series of dummy binary variables) can be employed as independent variables

(Fielding, 2007). At the same time, the categorical dependent variable is binary in logistic regression, while in discriminant regression it can have two or more categories. In general, logistic regression requires fewer assumptions, is more statistically robust in practice, and is easier to use and understand than discriminant analysis (Lea, 1997).

In conducting logistic regression, one can choose either a direct (enter all the independent variables at the same time) or stepwise approach (only some of the independent variables are selected in the model based on a pre-specified p value) (Hosmer & Lemeshow, 2000). Direct (simultaneous) logistic regression is more appropriate for hypothesis testing, while stepwise logistic regression for exploratory analysis (Lea, 1997). In other words, stepwise logistic regression is appropriate for a data-driven approach. One can choose either backward (starts by entering all the variables and then eliminates them one at a time) or forward stepwise regression (adds the variables one by one, in ascending order of the p value of the association with the outcome variable).

Logistic regression – and other regression-based approaches – can be employed in typology development. A study was conducted to classify patients with schizophrenia or schizoaffective disorder based on psychiatric symptoms, social functioning, and useful work (Lipkovich et al., 2009). Results of hierarchical cluster analysis identified five clusters of patients: A (none to minimal psychiatric symptoms, mild functional impairment), B (minimal psychiatric symptoms, moderately severe functional impairment), C (moderately severe across positive and depressive factors, mild to moderate functional impairment), D (moderately severe across negative and disorganization factors, severe functional deficit), and E (moderate to severe psychiatric symptoms, severe functional deficit). Stepwise logistic regression was used to construct predictive models of cluster membership for baseline predictors, and after 2/4/8 weeks of treatment. Membership in the

best (cluster A) and worst clusters (D and E) was predicted by baseline scores for functioning and symptom severity, and by early changes in symptoms with treatment.

Another study examined patterns of risky behaviours associated with methamphetamine use among young Thai adults using latent class analysis (Sherman et al., 2009). The analysis identified three classes of activities in which male participants reported engaging directly after using methamphetamines: work (job related); high-risk behaviours (motorcycle riding, fighting, sex); and combined (all activities). In the case of women, two classes were identified: work (housework) and high-risk behaviours. Following identification of these groups, logistic regression was used to examine univariate correlates of class membership, separately for men and women. The ‘high-risk behaviours’ and ‘combined’ groups of male users reported more frequent alcohol consumption and higher methamphetamine use compared with the men who mostly engaged in job-related activities after using methamphetamines. This represents an example of a different use of logistic regression compared to the study discussed above; while Lipkovich et al. (2009) employed logistic regression as a way to check whether its results were consistent with the categorical descriptors, Sherman et al. (2009) used logistic regression in order to compare the identified groups in terms of their risk level.

When considerable amount of research has been conducted on a certain topic, typologies can also be proposed based on systematic reviews of the available literature. For example, Wakerman et al. (2008) reviewed primary health care delivery models in rural and remote Australia. Based on the findings of their systematic review, they proposed a typology of five primary health care models: discrete services (delivered from an identifiable local site), integrated services (coordinated services available locally), comprehensive primary health care (broader in scope than integrated services models), outreach models (offering access to services for communities without discrete services) and

virtual outreach models (servicing communities without discrete services with the help of information technology methods). Similarly, one of the global typologies of sex work discussed in the introductory chapter was developed based on a review of the literature on sex work (Harcourt & Donovan, 2005).

In sum, there are multiple approaches to developing typologies. When little research has been conducted in a certain area, it might be necessary to propose a typology *a priori*. A typology can also be developed based on data collected for this purpose and, depending on the topic researched, it might be appropriate to use qualitative or quantitative methodology. If considerable amount of research was already conducted on a certain topic, a typology can also be developed based on a systematic review of the available literature. In terms of quantitative methods, typologies are usually developed using clustering methods (e.g. exploratory factor analysis, cluster analysis, latent factor analysis). Classification methods (e.g. discriminant analysis, CART, logistic regression) can be employed for ‘evaluating’ typologies developed using other methods; in such cases, the typology is the dependent variable. In addition, classification methods can allow comparisons across categories of a typology with regards to their association with various outcome measures; in such cases, the typology is an independent variable. Therefore, when developing a typology the choice of the method depends on the objective of the study and the available data.

## **2.4. Conclusion**

The female sex work typology recommended by the National AIDS Control Organization (classifying FSWs based on their primary place of solicitation) allows the direct identification of female sex workers necessary for conducting HIV prevention activities once hot spots have been mapped. The place of solicitation is expected to identify high risk

female sex workers in order to be useful for targeted interventions. While other criteria (i.e. place of sex, fee per sex contact, labour relation with the brothel owner/manager) have also been proposed to discriminate between categories of FSWs, this information requires direct contact with the women (section 2.1). Documented risk factors for HIV and STI infection and inconsistent condom use have also been identified in section 2.2. The extent to which all these factors indicate which FSWs are at high risk is examined in Chapters 4 and 5. In section 2.3 I examined various methods for developing a typology, which informed the choice of research methods used in quantitative data analysis (explained in Chapter 3).

## **Chapter 3. Data and methodology**

In this chapter I present details about the data collection and the methodology used during the analysis. First, I outline the main objectives of the Avahan programme and the IBBA, the survey sampling, survey methodology and ethical issues; I then describe the quantitative data analysis conducted for the purpose of this thesis (section 3.1). In Section 3.2 I describe the methodology of the qualitative study, including information about the data collection process and the qualitative analysis.

The results of the quantitative analyses are discussed in Chapters 4 and 5. Chapter 4 presents the results of the analysis conducted to develop a typology of female sex workers using IBBA data from Karnataka state. Chapter 5 applies the proposed method to other states, using IBBA data from Andhra Pradesh and Tamil Nadu. In order to further explore differences in risk across categories identified during the quantitative analysis, qualitative data were collected in Karnataka from a wide range of categories of female sex workers and their level of perceived vulnerability to HIV was assessed. These qualitative data are presented in Chapters 6 and 7.

### **3.1. Quantitative component**

#### **3.1.1. Avahan programme**

In 2003, Avahan – the India AIDS Initiative of the Bill and Melinda Gates Foundation – initiated a targeted HIV prevention programme among female sex workers, high risk men who have sex with men, clients of sex workers and injection drug users (Bill & Melinda Gates Foundation, 2010). Since 2003, Avahan has contributed over \$258 million to this targeted HIV prevention programme in India. The intervention has been implemented in six

high HIV prevalence states (Manipur and Nagaland in the north-east and Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh in the south) and along the national highways. With the help of peer educators, the programme promotes safe sex behaviour by promoting use of condoms, and targets the management of sexually transmitted infections (STI) by providing syndromic management for symptomatic STI. In addition, the programme works towards establishing an enabling environment necessary for the adoption of safe sex behaviour.

### **3.1.2. Integrated behavioural and biological assessment**

A series of district level cross-sectional integrated behavioural and biological assessment surveys have been conducted as part of the Avahan evaluation strategy. The main objectives of the IBBA have been: 1) to measure outcomes of the Avahan programme (behavioural, biological and programme coverage data); 2) to provide an additional source of size estimates of the target populations; and 3) to provide data for transmission dynamics models which can assess Avahan's impact on the HIV epidemic in the respective states (Saidel et al., 2008).

The National Institute of Epidemiology, Chennai, National Institute of Nutrition, Hyderabad, and Karnataka Health Promotion Trust (KHPT), Bangalore, have implemented the IBBA in Tamil Nadu, Andhra Pradesh and Karnataka states, respectively. The survey was coordinated by the National AIDS Research Institute (NARI), the main institute coordinating HIV/AIDS research in India and which is part of the Indian Council for Medical Research (ICMR). Technical support was provided by Family Health International (FHI).

Data were collected between 2004 and 2006 (in Karnataka: 2004 in Mysore district, 2005 in Shimoga, Bellary and Belgaum districts, and 2006 in Bangalore Urban district; in

Andhra Pradesh: 2005 in Karimnagar district and 2006 in the remaining seven districts; in Tamil Nadu: 2006 in all the five districts).

For further reference, Saidel et al. (2008) discussed in detail the methodology employed in the implementation of all the IBBA surveys conducted in India.

### **3.1.3. Sampling of IBBA**

The 18 districts for the IBBA (5 districts from Karnataka, 8 districts in Andhra Pradesh and 5 districts in Tamil Nadu) were purposively selected to reflect each state's geographical heterogeneity and based on the size of the female sex worker population. Each state is composed of a number of socio-cultural regions (categorisation developed through the People of India Project). It was decided to select one district from each socio-cultural region within each state, in order to capture the social, economic and cultural heterogeneity of each state. Within each socio-cultural region, the district with the highest estimated number of female sex workers was selected for the IBBA, based on previous mapping of the target population. In addition, the district with the capital city was also included in each state, because of the large number of female sex workers operating in these cities. In Andhra Pradesh, East Godavari district, where an Avahan-funded model programme on techniques of community mobilization has been implemented, was also included.

The target sample size per district was fixed at 400 completed interviews plus blood samples. In Bangalore the sample size was increased to 800 in order to ensure that the different types of sex work practised in the city were all adequately represented. This sample size was designed to provide 90% power, given 5% alpha error, to detect a 15% increase in consistent condom use in subsequent surveys, assuming a baseline prevalence of 50%. Sample size estimates incorporated a 1.7 design effect for cluster sampling.

Female sex workers were defined as women aged 18 years or older who had received money in exchange for sex at least once in the past one month. The survey covered women who were accessible through specific types of venues, such as brothels, homes, lodges or identifiable street-based solicitation places. Consequently, women who solicited clients only outside these venues (e.g. in massage parlours, beauty parlours, bars, through cell phones or agents) are likely to have been missed in the survey. These types of sex workers are hidden populations and hence their inclusion in the survey would require the use of respondent driven sampling (or other non-random sampling strategies) rather than cluster sampling, which is the sampling method employed for the IBBA. Whenever these groups of female sex workers were believed to be numerous (e.g. bar girls in Mumbai, Maharashtra state where an IBBA was also conducted), a separate survey was designed for them. The exclusion of these types of female sex workers may have implications for the results of this analysis, in terms of the exhaustiveness of the typologies of female sex work proposed.

Prior to the surveys, district level mapping was conducted in order to identify the sites where sex workers would be encountered. In the case of the time-location clusters, information was also collected about the hours of operation and the approximate number of sex workers available at different times of the day on the different days of the week. In Andhra Pradesh and Tamil Nadu, the local non-governmental organizations (NGOs) provided the initial list of sites, which was then further expanded by the research team, based on site verification. In Karnataka, the research team developed the initial list, which was subsequently verified by the local NGOs.

Conventional cluster sampling was employed in the case of women doing sex work in their own homes, brothels, lodges and *dhabas*. In the first stage of sampling, the clusters (delimited geographic areas) were selected by probability proportional to size, by taking

into account the number of female sex workers estimated in each cluster based on the mapping conducted prior to the survey. In the second stage, participants were selected randomly from the eligible respondents available during the time interval specified for the selected cluster.

Conventional time-location cluster (TLC) sampling was used for women soliciting sex work in public places; the required number of TLCs was randomly selected among the TLCs identified for each site. Respondents were selected by making a list of all the female sex workers present at the site (identifying each woman in terms of the colour of the clothing or other distinguishing characteristics), calculating the sampling interval (dividing the number of FSWs at the site by three – corresponding to a team of three interviewers), picking a random number between one and the sampling interval, and selecting three respondents using the random number and sampling interval. A variation of TLC sampling was used in Mysore city from Karnataka state, where the three sex work zones were divided into TLCs and women were recruited proportionately from all the TLCs.

#### **3.1.4. IBBA survey methods**

Research agencies were responsible for the hiring, training and managing of the field staff. The field teams usually consisted of a supervisor, three to four interviewers, a laboratory technician, a doctor and a community liaison person. The supervisors were responsible for the sampling and recruitment of participants in the case of TLCs, and used the help of the community liaison person in identifying the female sex workers in each site.

Once recruited, the participants had details of the study explained to them and what their participation would entail. Informed consent was obtained separately for the behavioural questionnaire and the biological specimens. Participants completed a face-to-face questionnaire administered by a trained interviewer and were invited to provide

venous blood and a urine sample. They then had the option to be examined by a doctor for clinical assessment and syndromic STI management.

In Karnataka, 2,312 FSWs participated in the survey and provided both behavioural and biological data, in Andhra Pradesh 3,271 and in Tamil Nadu 2,032 (response rates 83.2%, 74.5% and 65.8% respectively). In addition, another 104 women from Karnataka, 271 from Andhra Pradesh and 28 from Tamil Nadu answered the behavioural questionnaire, but refused to provide biological data. The behavioural questionnaire collected data on socio-demographic characteristics, HIV risk and vulnerability factors, and exposure to various components of the programme. Interviews were conducted in the local languages, namely Kannada in Karnataka, Telugu in Andhra Pradesh and Tamil in Tamil Nadu. Blood and urine were collected at the data collection sites, maintained at 4°C and transported daily to the district laboratories, where the serum was separated and aliquoted into three vials. The urine and sera were transported weekly to the state laboratories located at each of the state ICMR institutes. During that time, the clinical specimens were stored at 4°C. Quantitative syphilis serology (rapid plasma reagin (RPR)) was performed at the district laboratories, while the confirmatory testing (*Treponema pallidum* haemagglutination assay (TPHA)) was conducted on all reactive specimens at the state laboratory. After testing, syphilis results were returned to the research team who distributed them to the local participating government and NGO clinics, which were the centres to which IBBA respondents were referred. All the other laboratory tests were conducted at the state laboratories, namely HIV (antibody enzyme immunoassay (EIA)), and *Neisseria gonorrhoeae* and *Chlamydia trachomatis* (APTIMA nucleic acid amplification). All quality control testing was done at NARI on 10% of randomly selected sera, and on all *Neisseria gonorrhoeae*/ *Chlamydia trachomatis* positive urines plus 5% of randomly selected negative urines.

HIV serological testing was conducted using the J. Mitra enzyme immunoassay kit 2 (J. Mitra and Company, India), and all positive tests were confirmed using a second ELISA (Genedia HIV 1/2 ELISA 3.0 (Green Cross Life Science Corporation, South Korea)). Discordant cases were classified by the following methods in sequence: re-testing with J. Mitra kit and Genedia, rapid test and Western blot test. The Karnataka survey used the Detect HIV 1/2 system (BioChem ImmunoSystems, Montreal, Canada) as the screening test. In Karnataka, where serum samples were not provided, a dried blood spot was performed on finger prick blood and was then tested using the same serological tests. Serum was tested for syphilis by RPR (Span Diagnostics, Sachin, India) and TPHA (Syphagen TPHA kit, Biokit, Spain). In Karnataka, TPHA was tested using Treponema Pallidum Hemagglutination Assay test manufactured by Omega Diagnostics Ltd., Alloa, Scotland. High-titre syphilis was diagnosed as women who were TPHA positive and had an RPR titre  $\geq 1:8$ .

Aliquots from urine samples were tested by PCR for *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. Specimens collected from Mysore district, Karnataka were tested using Amplicor Duplex NG/CT PCR (Roche Molecular Diagnostics, Pleasanton, California), while specimens collected from all other districts were tested using APTIMA-Combo 2 PCR (Gen-Probe Inc., San Diego, California).

The behavioural data were entered twice using CSPro (version 3.1), first by the research agency and then by the state-level ICMR institute. In Karnataka, double entry was conducted by KHPT. Data reconciliation and initial cleaning were carried out by the ICMR institutes, with the exception of Karnataka, where it was done by KHPT. In the case of Andhra Pradesh and Tamil Nadu, the district-level survey data were merged, further cleaned, prepared for analysis and included standardized weights at the National Institute of Epidemiology. In Karnataka, this was done by KHPT.

### **3.1.5. Ethical issues**

IBBA protocols were approved by the Government of India's Health Ministry Screening Committee, Indian Council for Medical Research, and the Protection of Human Subjects Committee of Family Health International. In the case of Karnataka, the IBBA was also approved by the ethical review boards of St. John's Medical College, Bangalore and the University of Manitoba, Winnipeg, Canada. For the purpose of this analysis, ethical approval was obtained from University College London, London, England.

The survey was anonymous, without recording any names or personal identifiers. All participants were 18 years old or above; minors were not recruited for the survey. For each participant, informed consent was obtained separately for the interview and for the biological samples. Each respondent had the opportunity to consult a physician and receive an STI examination, access the results of their syphilis test and if necessary receive treatment for it. Syndromic treatment was provided on site at the time of the survey to participants who reported symptoms and syphilis results and treatment were made available 7 to 10 days after the interview, at a local participating government or NGO clinic. Participants had access to their syphilis results through a referral card system using preprinted labels which linked the participant to the appropriate syphilis test result, without compromising the confidentiality of the data.

The equivalent of a day's worth of lost wages was provided to most respondents as compensation for their time. However, in some cases, depending on the recommendation of the local NGO and the female sex work community, 'gifts' were provided instead of money. Money was also provided in order to cover transportation costs for obtaining syphilis results and follow-up care.

### **3.1.6. Publications using the IBBA data**

The IBBA data collected among female sex workers in India have been analysed to a certain extent and the findings have been presented in a number of peer-reviewed papers. Most of the papers were published in the Supplement 5 of *AIDS* in December 2008 and Supplement 1 of *Sexually Transmitted Infections* in February 2010. Saidel et al. (2008) presented the methodology employed in the implementation and analysis of all the IBBA surveys conducted in India. Ramesh et al. (2008) analysed the determinants of HIV prevalence and the factors associated with district-level variations of HIV prevalence, using data on female sex workers from the four south Indian states Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu. Reza-Paul et al. (2008) assessed the impact of the Avahan programme on the sexual behaviour and sexually transmitted infections among female sex workers from Mysore district of Karnataka state, using the IBBA data from two survey rounds. Ramesh et al. (2010) conducted a similar analysis at the Karnataka state level. Ramakrishnan et al. (2010) evaluated Avahan programme's coverage of FSWs, focus on high-risk FSWs and intermediate programme outcomes using data from the four South Indian states. Mishra et al. (2009) discussed the determinants of syphilis among female sex workers in Karnataka state. Chapters 4 and 5 of this thesis use data from the first round of the IBBA surveys conducted among female sex workers in the south Indian states of Karnataka, Andhra Pradesh and Tamil Nadu.

### **3.1.7. Data analysis**

#### **3.1.7.1. Weights and clustering**

Survey weights and clustering were accounting for either using the survey analysis functions of STATA version 10 (STATA Corp Texas USA) or by specifying the relevant options in the commands (i.e. when selecting the multivariate models). The state level

survey weights were used to account for differential recruitment of female sex workers by typology within the district, differential non-response rates, and differential probabilities of selection across districts. The first step in calculating the weights at the state level was the calculation of an estimate of the proportion of female sex workers in the state that work in each district. Once the proportions were calculated, the district level standardized weight (which took into account the differential recruitment, non-response and typology) for each of the clusters in the respective district was multiplied with the calculated proportion (same for all the clusters of the district) and the product was subsequently standardized to arrive at the standardized state-level weights. The databases were provided with attached weights.

### **3.1.7.2. Objectives and stages of data analysis**

The objectives of the quantitative data analysis are to investigate risk factors for HIV and STIs and form HIV and STI risk typologies. The National AIDS Control Organization classifies female sex workers based on their main place of solicitation, which allows direct identification of FSWs once hot spots have been mapped. At the same time, the typology of sex work is expected to act as a proxy of HIV risk (National AIDS Control Organization, 2007a). Despite the outreach appropriateness of the main place of solicitation, it may not be the most helpful in identifying high-risk FSWs, or insufficient by itself. I propose a method for devising a typology of female sex work which prioritizes place of solicitation and is also helpful for targeted interventions by indicating which FSWs are at high risk. For this purpose, I examine other criteria that have been proposed to discriminate between categories of FSWs and documented risk factors for HIV and STI infection and inconsistent condom use, and assess the extent to which these factors indicate which FSWs are at high risk. I construct ‘full’ typologies which distinguish between FSWs based on their main place of solicitation and the strongest additional predictor of HIV and STI

prevalence respectively (adjusting for place of solicitation and district) and then collapse the resulting categories of FSWs into ‘reduced’ typologies consisting of high, medium and low risk groups. The typologies relating to HIV and STI prevalence may be distinct. The proposed typologies will, if possible, be both outreach appropriate and useful for targeted interventions.

More specifically, the analysis consists of three stages. In Stage 1, I conducted univariate and bivariate analyses by examining possible risk factors and their association with HIV and STI status respectively. In Stage 2, I conducted separate stepwise forward logistic regression selection models ( $p < 0.05$ ) with HIV and STI status as outcome variables, and with place of solicitation and district included with certainty, in order to identify the risk factors for each dependent variable. In Stage 3, I derived ‘full’ typologies of sex work based on the main place of solicitation and the strongest risk factors of HIV and STI status (identified in Step 2) and grouped the resulting categories of the typologies into high, medium and low risk groups (reduced typologies).

In the last section of Chapter 2 I examined various methods for developing a typology, namely clustering methods such as explanatory factor analysis, cluster analysis and latent class analysis, and classification methods such as discriminant analysis, CART and logistic regression. In this study, while clustering methods could be used to identify clusters in the data, classification methods are more appropriate, as they allow the specification of dependent and independent variables. Within the classification techniques, CART is not an established method and its properties are not well understood. While both discriminant and logistic regression can explain categorical variables, discriminant analysis requires that the independent variables are interval-level and normally distributed, while logistic regression allows both interval and categorical independent variables. Moreover, logistic regression has fewer assumptions and is more statistically robust in practice

(Fielding, 2007; Lea, 1997). Stepwise forward logistic regression begins without any variables in the model and adds significant predictors to the model one at a time (from the strongest to the weakest predictor), indicating the relative importance of the risk factors (Hosmer & Lemeshow, 2000). I chose to use stepwise forward model selection, as it allowed me to broadly assess the relative importance of significant risk factors of the outcome variables, based on the order they were selected in the model.

While one may use two or more risk factors to derive sex work typologies, in this analysis I chose to select the single strongest risk factor in order to propose a simple typology. Nevertheless, the stepwise procedure identifies risk factors in the order of their relative importance and hence one could easily identify the two most important factors if one chooses to do so. In the case of continuous risk factors, I looked to include these in the typology formation only if the association was broadly linear (or at least monotonic, i.e. HIV/STI status either consistently increases or decreases with an increase in the independent variable over its range). I did this because of a prior belief that only monotonic associations are plausible, non-monotonic associations likely result from confounding so a factor with a non-monotonic association does not provide a useful basis for a typology. The same concern for deriving a simple typology has driven the attempt to identify a reduced typology; for this purpose, I arbitrarily chose that the reduced typology should have three categories I call low, medium and high risk groups. The method proposed clearly extends to any other fixed number of categories in a reduced typology or even to a number determined by the data in some way.

I included the main place of solicitation in the formation of the typology even if not statistically significant and even though it might potentially not then feature in the formation of the reduced typology. In other words, because it is such a key factor from an

outreach perspective I wanted to give the place of solicitation a special status and give it 'every chance' to feature in the reduced typologies.

In summary, I employed the classification method forward stepwise logistic regression in order to identify the strongest HIV/STI risk factors to include in revised typologies of female sex work.

### **3.1.7.3. Dependent and independent variables**

The outcome variables are the HIV and STI prevalence respectively. HIV prevalence was employed as a measure of lifetime risk and STI (high-titre syphilis, gonorrhoea or chlamydia) prevalence as a measure of recent risky behaviour. In the remainder of this section I discuss the independent variables employed in the analysis; any differences in the variables and their operationalization across states and stages of analysis are highlighted below or in the subsequent section.

Firstly, I examined the criteria used to classify female sex workers in India, namely in addition to the main place of solicitation (Chandrasekaran et al., 2006; Isac et al., 2007; Karnataka Health Promotion Trust, 2005; National AIDS Control Organization, 2007a), the main place of sex (Blanchard et al., 2005) and the fee solicited from the client (Kotiswaran, 2008; UNAIDS, 2000) (see section 2.1). While West Bengal FSWs are also classified based on the labour relation between the FSW and the brothel owner/manager (Kotiswaran, 2008), this information was not collected in the survey and hence this aspect was not explored.

Secondly, I examined the variables documented by previous research to be significant predictors of HIV, STI and/or inconsistent condom use among female sex workers in India (see section 2.2): age (Dandona et al., 2005; Halli et al., 2006; Mishra et al., 2009; Ramesh et al., 2008; Samet et al., 2010; Sarkar et al., 2008; Sarkar et al., 2005;

Sarkar et al., 2006; Shahmanesh et al., 2009), literacy (Dandona et al., 2005; Halli et al., 2006; Ramesh et al., 2008), doing other work than sex work (Ramesh et al., 2008), marital status (Brahme et al., 2006; Mishra et al., 2009; Ramesh et al., 2008; Samet et al., 2010), having a regular partner (Shahmanesh et al., 2009), age at sexual debut (Ramesh et al., 2008), age at entry into sex work (Ramesh et al., 2008; Silverman et al., 2006), duration in sex work (Agarwal et al., 1999; Mishra et al., 2009; Ramesh et al., 2008; Silverman et al., 2006; Simoes et al., 1993), monthly client volume (Agarwal et al., 1999; Mishra et al., 2009; Ramesh et al., 2008), number of regular clients (Shahmanesh et al., 2009), migration status (Mishra et al., 2009), condom use (Brahme, Mehta, Sahay, Joglekar, Ghate, Joshi, Gangakhedkar, Risbud, Bollinger, & Mehendale, 2006b), group sex (Panchanadeswaran et al., 2008), alcohol consumption (Panchanadeswaran et al., 2008; Rodríguez et al., 2010), experience of violence or forced sex (Panchanadeswaran et al., 2008; Shahmanesh et al., 2009), reported STI symptoms (Sarkar et al., 2006; Shahmanesh et al., 2009), HIV knowledge (Dandona et al., 2005; Shahmanesh et al., 2009), programme exposure (Bhave et al., 1995; Blankenship et al., 2008; Ramakrishnan et al., 2010; Ramesh et al., 2010; Reza-Paul et al., 2008) and sex workers' collective membership (Dandona et al., 2005; Ghose et al., 2008; Halli et al., 2006).

A number of variables were documented by previous studies to be risk factors, but were not examined in this study due to reasons mentioned below even if they were available in the IBBA datasets: a) level of education (Mishra et al., 2009; Shahmanesh et al., 2009) – this question was only asked of the literate respondents (32.8% of Karnataka sample, 31.5% in Andhra Pradesh, and 46% in Tamil Nadu); b) reasons for entering sex work (whether they were trafficked: Sarkar et al. 2008) – very few study participants said they were trafficked (6% of Karnataka FSWs, of which 65% also mentioned they entered sex work because they 'wanted a better life'; this information was not available for the

other two states); c) injectable drug use (Agarwal et al., 1999) – very few participants used injectable drugs (6 Karnataka FSWs; this information was not available for the other two states).

A number of other variables were also documented by previous research studies to be risk factors of HIV or STI status or inconsistent condom use: religion (Shahmanesh et al., 2009), ethnicity (Shahmanesh et al., 2009), period of migration (Shahmanesh et al., 2009), financial autonomy (Blankenship et al., 2008; Shahmanesh et al., 2009), control over the type of sex and the amount charged (Blankenship et al., 2008), power dynamics existing within the sex work industry (Evans & Lambert, 2008), experience of physical violence, sexual violence or forced sex upon entry into sex work (Sarkar et al., 2008), social support (Dandona et al., 2005; Shahmanesh et al., 2009), suicide attempts (Shahmanesh et al., 2009), access to free treatment services (Shahmanesh et al., 2009) and condoms (Dandona et al., 2005), and diagnosed genital ulcers or warts (Brahme, Mehta, Sahay, Joglekar, Ghate, Joshi, Gangakhedkar, Risbud, Bollinger, & Mehendale, 2006b). However, these variables were not examined in this study because the information was not collected in the IBBA survey.

In addition to the independent variables discussed above, I also examined the district of residence and FSWs' experience of anal sex, documented in the literature to be associated with higher risk of HIV infection compared to vaginal sex (Boily et al., 2009). Table 3.1 provides a list of the independent variables examined in the analysis for each state and the corresponding operationalization. While the questionnaire employed in the IBBA was largely the same across states, some questions were not included in all the states/districts. The Andhra Pradesh and Tamil Nadu datasets were provided merged and included only the common questions across the four states, while the completed Karnataka dataset was made available by the Karnataka Health Promotion Trust. Therefore, the following

variables were examined for Karnataka, but not for Andhra Pradesh and Tamil Nadu datasets: fee per sex contact, number of monthly unprotected sexual contacts, group sex experience, receiving the ‘grey pack<sup>4</sup>’, visiting the drop-in-centre, seeing a condom demonstration, and sex workers’ collective membership.

Table 3.1. Operationalization of the independent variables employed in the analysis by state

Variable	Karnataka	Andhra Pradesh	Tamil Nadu
District	Belgaum Bellary Shimoga Bangalore Urban Mysore	Chitoor East Godavari Guntur Hyderabad Karim Nagar Prakasham Visakhapatnam Warangal	Chennai Coimbatore Dharmapuri Madurai Salem
Age	18-24 years 25-29 years 30-34 years 35-39 years 40+ years	18-24 years 25-29 years 30-34 years 35-39 years 40+ years	18-24 years 25-29 years 30-34 years 35-39 years 40+ years
Can read and write	No Yes	No Yes	No Yes
Other work than sex work	No Yes	No Yes	No Yes
Marital status	Unmarried Married Ex-married Other ( <i>Devadasis</i> )	Unmarried Married Ex-married	Unmarried Married Ex-married
Has a regular partner	No Yes	No Yes	No Yes
Age at first sex contact	<14 years 14-15 years 16-17 years 18-19 years 20+ years	<15 years 15-16 years 17-18 years 19+ years	<15 years 15-16 years 17-18 years 19+ years
Age at entry into sex work	<20 years 20-24 years 25-29 years 30-34 years 35+ years	<18 years 18-19 years 20-24 years 25-29 years 30+ years	<20 years 20-24 years 25-29 years 30-34 years 35+ years
Duration in sex work	0-1 year 2-4 years	0-2 years 3-4 years	0-2 years 3-4 years

<sup>4</sup> A one-time dose of azithromycin 1 g and cefixime 400 mg

Variable	Karnataka	Andhra Pradesh	Tamil Nadu
	5-9 years	5-9 years	5-9 years
	10-14 years	10+ years	10+ years
	15+ years		
Main place of solicitation	Home	Home	Home
	Brothel	Brothel	Street
	Street	Street	Other
	Other	Other	
Main place of sex	Home	Home	Home
	Rented room	Rented room	Rented room
	Lodge	Lodge	Lodge
	Brothel	Brothel	Street
	Street	Street	Other
	Other	Other	
Monthly client volume	1-15 clients	1-15 clients	1-15 clients
	16-30 clients	16-30 clients	16-30 clients
	31-45 clients	31-45 clients	31-45 clients
	46-60 clients	46-60 clients	46+ clients
	61+ clients	61+ clients	
Fee per sex contact	<100 Rs	-	-
	100-199 Rs	-	-
	200-299 Rs	-	-
	300-399 Rs	-	-
	400+ Rs	-	-
Number of regular clients out of 10	0-1 clients	0-3 clients	0-3 clients
	2-3 clients	4-5 clients	4-5 clients
	4-5 clients	6-7 clients	6-7 clients
	6-10 clients	8-10 clients	8-10 clients
Ever migrated for sex work	No	No	No
	Yes	Yes	Yes
Inconsistent condom use with occasional clients	No	No	No
	Yes	Yes	Yes
Inconsistent condom use with regular clients	No	No	No
	Yes	Yes	Yes
Inconsistent condom use with regular partners	No	No	No
	Yes	Yes	Yes
Number of unprotected sex contacts per month	0	-	-
	1-10	-	-
	11+	-	-
Ever had anal sex	No	No	No
	Yes	Yes	Yes
Had group sex in last month	No	-	-
	Yes	-	-
Alcohol consumption	Less than 1 per week/ Never	Less than 1 per week/ Never	Less than 1 per week/ Never
	At least 1 per week	At least 1 per week	At least 1 per week
Beaten or forced to have sex in the past year	No	No	No
	Yes	Yes	Yes

Variable	Karnataka	Andhra Pradesh	Tamil Nadu
Reported STI symptoms in the past year	No Yes	No Yes	No Yes
HIV knowledge	Low (0-2 questions) Medium (3-4 question) High (5-6 questions)	Low (0-2 questions) Medium (3-4 question) High (5 questions)	Low (0-2 questions) Medium (3-4 questions) High (5 questions)
Ever attended the programme clinic	No Yes	No Yes	No Yes
Ever received the 'grey pack'*	No Yes	- -	- -
Ever visited the drop-in-centre	No Yes	- -	- -
Ever contacted by peer educator	No Yes	No Yes	No Yes
Ever seen a condom demonstration	No Yes	- -	- -
Program exposure	0-1 activity 2-3 activities 4-5 activities	Not exposed 1 activity 2 activities	Not exposed 1 activity 2 activities
Is a member of a collective	No Yes	- -	- -

\* A one-time dose of azithromycin 1 g and cefixime 400 mg

Table 3.2 provides a list of the questions asked in the survey for the variables used in the analysis. While most variables were measured by the answers to various questions, some variables were derived based on other variables. Duration in sex work was obtained by subtracting the age at entry into sex work from participant's age at the time of the survey. Monthly client volume was derived: 1) for Karnataka by multiplying 'daily client volume'<sup>5</sup> by 'the number of days worked per week'<sup>6</sup> by four; and 2) for the other two states by multiplying reported weekly client volume<sup>7</sup> by four. The number of monthly unprotected sexual contacts was computed by dividing by 10 the product of the monthly

<sup>5</sup> Question asked in the IBBA: How many clients do you entertain in a day? (open ended)

<sup>6</sup> Question asked in the IBBA: How many days in a typical week do you entertain clients? (open ended)

<sup>7</sup> Question asked in the IBBA: How many clients do you entertain in a typical week? (open ended)

client volume and the reported number of unprotected sexual contacts out of 10<sup>8</sup>. Reported STI symptoms (1=yes, 0=no) was ‘1’ if the participant reported at least one of the three following symptoms during the last 12 months: vaginal discharge, lower abdominal pain without diarrhea or menses, or genital ulcers or sores<sup>9</sup>. In Karnataka, HIV knowledge was measured by adding the answers to the six following questions presented as HIV preventive measures: ‘take medicine/ traditional herbal mixture before sex’ (recoded), ‘always use condom while engaging in sex’, ‘avoid the use of shared injection needles’, ‘avoid getting mosquito or other insect bites’ (recoded), ‘don’t use shared clothes or eating utensils’ (recoded), ‘eat nutritious food’ (recoded). The first item was not available for Andhra Pradesh and Tamil Nadu and hence HIV knowledge was measured by the responses to the other five questions. For the Karnataka dataset, the programme exposure variable was computed by adding the answers to the following questions: ever received the ‘grey pack’, ever visited the drop-in-centre, ever seen a condom demonstration, ever attended the programme clinic, and ever contacted by peer educators. In the merged dataset only the last two items were available and hence programme exposure for Andhra Pradesh and Tamil Nadu was computed using the answers to these two questions.

Table 3.2. Questions and answers employed in the survey to measure the independent variables

Variable	Question	Answers
District	Filled in by interviewer	
Age	How old are you? (in completed years)	Open ended
Can read and write	Can you read and write?	Yes No
Other work than sex work <sup>1</sup>	Apart from sex work, what other work do you do to earn income?	None Non-agricultural labour

<sup>8</sup> Question asked in the IBBA: Out of every 10 clients that you entertain, how many of the clients do not use condoms? (open ended)

<sup>9</sup> Questions asked in the IBBA: During the past 12 months have you suffered from vaginal discharge?, During the past 12 months have you suffered from lower abdominal pain without diarrhea or menses?, During the past 12 months have you suffered from genital ulcers or sores? (Yes/ No)

Variable	Question	Answers
		Petty business Maid servant Agricultural labour Handicrafts Other
Marital status <sup>2</sup>	What is your current marital status?	Unmarried (living alone) Unmarried (live-in partner) Married Separated/ deserted Divorced Widowed Widow/ separated, and live with partner Other
Has a regular partner	Do you have a main (regular) male sexual partner other than your clients who pay you?	Yes No
Age at first sex contact	How old were you when you first had sexual intercourse? (in completed years)	Open ended
Age at entry into sex work	How old were you when you started sex work? (in completed years)	Open ended
Duration in sex work	Derived	
Main place of solicitation <sup>3</sup>	Where do you generally solicit/ pick up/ get most of your clients?	Home Rented room Lodge Dhaba Brothel Bar/ night club Vehicle Public places Other
Main place of sex <sup>3</sup>	Where do you entertain most of your clients?	Home Rented room Lodge Dhaba Brothel Bar/ night club Vehicle Public places Other
Monthly client volume	Derived	
Fee per sex contact	How much do you charge for a sexual encounter with a client?	Open ended
Number of regular clients out of 10	Out of 10 every clients that you entertain, how many are regular clients?	Open ended

Variable	Question	Answers
Ever migrated for sex work	Have you ever practiced sex work anywhere other than [current location]?	Yes No
Inconsistent condom use with occasional clients <sup>4</sup>	How often do you use condom with occasional clients?	Every time Often Sometimes Never
Inconsistent condom use with regular clients <sup>4</sup>	How often do your regular clients use condoms?	Every time Often Sometimes Never
Inconsistent condom use with regular partners <sup>4</sup>	In general, how often does this partner [regular partner] use condoms with you?	Every time Often Sometimes Never
Number of unprotected sex contacts per month	Derived	
Ever had anal sex	Have you ever had anal sex?	Yes No
Had group sex in last month	Have you had sex in a group in the past month? By that I mean vaginal/ anal/ oral sex with more than one partner at the same time.	Yes No
Alcohol consumption <sup>5</sup>	During the past month, how often have you consumed drinks containing alcohol?	Every day At least once a week < Once a week/ Never
Beaten or forced to have sex in the past year	In the past one year, were you ever beaten or otherwise physically forced to have sexual intercourse with someone even though you didn't want to?	Yes No
Reported STI symptoms in the past year	Derived	
HIV knowledge	Derived	
Ever attended the programme clinic	Have you ever visited the clinic(s) run by the [NGO]?	Yes No
Ever received the 'grey pack'	Have you ever received a grey packet with 4 tablets [show the packet] at the clinic?	Yes No
Ever visited the drop-in-centre	Have you visited the drop-in-centre run by [NGO]?	Yes No
Ever contacted by peer educator	Have you ever been contacted by the peers/staff of [NGO] to provide you with information regarding HIV/AIDS and condom use?	Yes No
Ever seen a condom	Have you ever seen a demonstration on	Yes

Variable	Question	Answers
demonstration	correct condom use by a peer educator/ outreach worker from [NGO]?	No
Program exposure	Derived	
Is a member of a collective	Are you a member of any sex worker collective?	Yes  No

<sup>1</sup> Recoded as: no = none, yes = non-agricultural labour, petty business, maid servant, agricultural labour, handicrafts, other; <sup>2</sup> Recoded as: unmarried = unmarried (living alone), unmarried (live-in partner); married = married; ex-married = separated/deserted, divorced, widowed, widow/ separated and live with partner; other = other; <sup>3</sup> Some of the categories were included in the 'other' category due to small number of cases; <sup>4</sup> Inconsistent condom use was recoded as: yes=often, sometimes, never, no=every time; <sup>5</sup> Recoded as: less than once per week/never = less than once per week/never; at least once per week = every day, at least once a week.

I considered including in the multivariate model selection processes all the independent variables discussed above, however some of the variables were examined only at the univariate and bivariate level. For Karnataka I did not include in the model selection processes: 1) the questions not asked in Mysore district (experience of violence or forced sex, group sex experience, inconsistent condom use with occasional clients, alcohol consumption, HIV knowledge, sex workers' collective membership) in order to utilize the data from all the five districts; 2) age at entry into sex work (collinear with duration in sex work which was included); 3) the separate programme indicators (visited the clinic, received the 'grey pack', visited the drop-in-centre, contacted by peer, seen a condom demonstration), but included the derived programme exposure variable; and 4) inconsistent condom use with regular clients and regular partners, but included the number of monthly unprotected sexual contacts. Consequently, the following independent variables were included in the initial stepwise forward logistic regression models for Karnataka: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, age at sexual debut, duration in sex work, monthly client volume, fee charged per sex act, number of regular clients, unprotected sexual contacts per month, anal sex, having a regular partner, reported STI symptoms, and programme exposure. The main place of solicitation

and district were specified as ‘fixed’ independent variables, as they represent information that programmers can identify without direct contact with the female sex workers. Similarly, in the case of Andhra Pradesh and Tamil Nadu the following independent variables were examined in Stage 1 of the analysis but were not included in the multivariate model selection processes: 1) age at entry into sex work (collinear with duration of sex work); 2) inconsistent condom use with occasional clients, regular clients and regular partners, but included a derived variable ‘inconsistent condom use with occasional or regular clients’; and 3) separate programme exposure variables (attended clinic, contacted by peer educator), but included the derived programme exposure variable. The following independent variables were included in the multivariate model selection processes: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional or regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure.

Table 3.3 provides a list of the independent variables employed in Stage 2 of the analysis and specifies for each state whether each variable is operationalized as a dichotomous, continuous or categorical variable. In addition, because some of the categories of the variable ‘district’ were collapsed in the case of the Andhra Pradesh analysis, the table specifies the categories employed. Similarly, I specify the categories of the ‘main place of sex’ variable. One of the assumptions of logistic regression (the statistical method employed in Stage 2) is that the independent variables should not be multicollinear (Meyers, Gamst, & Guarino, 2006). In order to deal with the large collinearity between the main place of solicitation and the main place of sex (arising

because sex often occurs where it is solicited), I entered in the model the following dummy variables which together reflect the place of solicitation (though in part reflect also place of sex): home (solicitation in the home, followed by sex in the home as predominantly occurs – reference category), brothel (solicitation in the brothel, followed by sex in the brothel as predominantly occurs), street (solicitation in public places), and other (other places of solicitation, plus also rare combinations such as home solicitation followed by sex elsewhere, and brothel solicitation followed by sex elsewhere). The main difference between the place of solicitation and the combination of places of sex and solicitation (see Table 3.3) is that those FSWs who solicit in the street may have sex in a variety of locations. Therefore, I created three dummy variables (the fourth acting as reference category) which together reflect the place of sex for FSWs who solicit on the street: street to home and other [home to home, brothel to brothel, other solicitation, street to other], street to rented room, street to lodge, and street to street. These dummy variables which together are termed ‘place of sex’ reflect the information gained from place of sex beyond what is already implicit from place of solicitation and so avoids colinearity with the main place of solicitation. Where place of sex is selected in a model selection we also present the odds ratios for the categories of the single combined places of solicitation and sex variable (see Table 3.3) to allow easier interpretation of these factors.

Table 3.3. Operationalization of independent variables employed in Stage 2 of the analysis by state

Variable	Karnataka	Andhra Pradesh	Tamil Nadu
District	Categorical	Chitoor East Godavari Guntur/ Prakasham Hyderabad Karim Nagar/ Warangal Visakhapatnam	Categorical
Age	Continuous	Continuous	Continuous

Variable	Karnataka	Andhra Pradesh	Tamil Nadu
Can read and write	Dichotomous	Dichotomous	Dichotomous
Other work than sex work	Dichotomous	Dichotomous	Dichotomous
Marital status	Categorical	Categorical	Categorical
Has a regular partner	Dichotomous	Dichotomous	Dichotomous
Age at first sex contact	Continuous	Continuous	Continuous
Duration in sex work	Continuous	Continuous	Continuous
Main place of solicitation	Home Brothel Street Other	Home Brothel Street Other	Home Street Other
Main 'place of sex'	Street to home & other Street to rented room Street to lodge Street to street	Street to home & other Street to rented room Street to lodge Street to street	Street to home & other Street to rented room Street to lodge Street to street
Main place of solicitation and main place of sex (composite variable)*	Home to home Brothel to brothel Street to home Street to rented room Street to lodge Street to street Other	-	-
Monthly client volume	Continuous	Continuous	Continuous
Fee per sex contact	Continuous	-	-
Number of regular clients out of 10**	Continuous	Continuous	Continuous
Ever migrated for sex work	Dichotomous	Dichotomous	Dichotomous
Inconsistent condom use with occasional or regular clients	-	Dichotomous	Dichotomous
Number of unprotected sex contacts per month	Continuous	-	-
Ever had anal sex	Dichotomous	Dichotomous	Dichotomous
Alcohol consumption	-	Dichotomous	Dichotomous
Beaten or forced to have sex in the past year	-	Dichotomous	Dichotomous
Reported STI symptoms in the past year	Dichotomous	Dichotomous	Dichotomous
HIV knowledge	-	Continuous	Continuous
Program exposure	Continuous	Categorical	Dichotomous

\* This variable is only included to clarify associations if the place of sex is included in the model, and not for model building itself

\*\* In the case of the Tamil Nadu multivariate model with STI as an outcome variable, the number of regular clients is categorized (0-3 clients, 4-5 clients, 6-7 clients, 8-10 clients) in order to examine whether the association with STI status is linear

As explained at the beginning of this subsection, the independent variables were included in the analysis based solely on their potential to be risk factors of HIV, STI infection and/or consistent condom use. However, they vary considerably in terms of their outreach appropriateness. More specifically, there are three categories of independent variables. Firstly, there are a number of variables which can be roughly determined about FSWs without asking them directly, such as age, and possibly marital status in contexts where this influences appearance. These variables can be used directly for outreach among all FSWs; the women can be approached at their places of solicitation and then further ‘categorized’ using visual indicators. Nevertheless, these categorisations are sensitive to incorrect assessments. Secondly, there are factors that can be linked to geographic places, such as the place of sex and alcohol consumption, as FSWs can be approached where they entertain clients, at places of solicitation associated with alcohol consumption or at drinking venues. These factors might lead to particular location-based approaches of identifying high-risk FSWs which may or may not be practically useful. Thirdly, there are variables which represent information that can only be obtained by asking the FSWs directly, such as income and literacy; this type of information is sensitive to misreporting. These factors are useful to know about and can inform the nature of interventions, but are not particularly useful in locating the women at highest risk. The three categories of factors are not mutually exclusive, for example knowing that alcohol is linked to HIV risk could lead to some geographic targeting and could also cause programmers to address alcohol abuse in their outreach activities.

#### **3.1.7.4. Data analysis techniques**

I now discuss the statistical techniques employed in each stage of the analysis using STATA version 10.

Stage 1: I examined possible risk factors using frequency distributions and mean values and their associations with HIV and STI status using crosstabulations. In section 3.1.7.3 I discussed the dependent and independent variables examined in this stage of the analysis (also see Table 3.1).

Stage 2: I built an initial logistic regression model for each outcome (HIV and STI status) separately, including in the selection process those independent variables described in the previous section (also see Table 3.3), and including place of solicitation and district with certainty. The initial models were built using stepwise forward logistic regression ( $p < 0.05$ ), and allowing main effects only. To investigate interactions I added interaction terms for each pair of variables in the initial model one at a time to the initial model. Those interaction terms that were significant ( $p < 0.05$ ) adjusting for the initial model were then added all together into a forward logistic regression model selection process ( $p < 0.05$ ), retaining the initial model with certainty, and so resulting in a final model consisting of the main effects in the initial model and possibly some interaction terms between the variables in the initial model. This process was repeated separately with HIV and STI status as outcome variables. By allowing interactions the final model determined whether the significant predictors had direct effects on the outcome variables or if their effect varied depending on the value of another independent variable.

Stage 3: The analysis conducted in the previous stage helped identify the strongest predictors of HIV and STI status, and in particular the strongest single predictor beyond place of solicitation and district, which is the first variable selected in the initial model selection process. I derived typologies of female sex work based on the main place of solicitation and this strongest additional predictor of each of HIV and STI status. I grouped the categories of the resulting ‘full’ typologies (i.e. the categories defined by all the combinations of place of solicitation and the strongest additional predictor, excluding rare

combinations) into a reduced typology consisting of high, medium and low risk groups depending on their HIV and STI prevalence. More specifically, the full typologies were examined using frequency distributions and crosstabulations by HIV and STI status. Based on the results of these crosstabulations the categories were ranked in descending order of the prevalence. These ranked categories were then recoded into three-group variables<sup>10</sup>; all possible groupings were derived. For example, if the full typology had seven categories, there are 15 different possible combinations of how these categories could be grouped into three groups: 1, 2, 3-7; 1, 2-3, 4-7; 1, 2-4, 5-7; 1, 2-5, 6-7; 1, 2-6, 7; 1-2, 3, 4-7; 1-2, 3-4, 5-7; 1-2, 3-5, 6-7; 1-2, 3-6, 7; 1-3, 4, 5-7; 1-3, 4-5, 6-7; 1-3, 4-6, 7; 1-4, 5, 6-7; 1-4, 5-6, 7; 1-5, 6, 7. I fitted one logistic regression model corresponding to each of the 15 possible reduced typologies, recorded the log likelihood of each model and selected the model with the highest log likelihood. This process (conducted separately for HIV and STI status as outcome variables) allowed that the categories of the full typologies be collapsed into a reduced typology of three groups (called high, medium and low risk) with broadly comparable prevalence objectively according to ‘natural’ cut-offs.

If the strongest predictor identified as a result of the stepwise regression interacted with another statistically significant predictor, I examined whether the ranking of the categories of a full typology ignoring the interaction held among FSWs with differing levels of the other predictor in the interaction.

### **3.2. Qualitative component**

The qualitative study consisted of 50 in-depth interviews with FSWs from thirteen sex work settings documented throughout Belgaum district, Karnataka. The data were collected

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<sup>10</sup> In the case of Tamil Nadu, I derived all possible combinations of three or two groups, as the full typologies have fewer categories (6 or fewer).

in March-April 2009, following the analysis of the IBBA data among female sex workers from Karnataka.

A range of qualitative research methods can be employed for such studies, including interviews with female sex workers, interviews with key informants, focus groups, observation, and personal diaries. Using personal diaries would be difficult, partly because most female sex workers are illiterate; nevertheless, this method could provide accurate data on each participant's movement between sex work settings, which is one of the issues explored in the qualitative study. However, this was not the main objective of the study and longitudinal data would be mostly unnecessary. An ethnographic approach using observation of the sex work settings or interviews with key informants could provide information about the mode of operation about the sex work industry, but less so about the vulnerabilities associated with practising sex work in different settings; for this purpose it is most helpful to have information from the sex workers themselves. Focus groups and interviews with female sex workers are most helpful in providing information about the vulnerabilities associated with sex work and are also informative of the mode of operation of the industry. Interviews with female sex workers were chosen over interviews with key stakeholders as I was interested in women's descriptions of the sex work settings where they have been working and the risks they face. I chose to employ in-depth interviews with female sex workers rather than focus groups because I wanted to get a detailed understanding of each woman's perspective on the risks they face. Moreover, I included women working in settings not covered by the IBBA and where they were working covertly. Although focus groups may have provided useful additional data, women working in hidden settings such as beauty parlours were extremely wary of being identified as sex workers and would not have consented to be involved in group discussions.

### **3.2.1. Selection of the study district**

As mentioned previously, the IBBA was conducted in five districts in Karnataka i.e. Bangalore Urban, Belgaum, Bellary, Shimoga and Mysore. Given that the qualitative component was meant to complement the quantitative analysis and find explanations for some of its findings, the qualitative study was conducted in one of the IBBA districts. It was decided to collect data from only one of the five districts, because the main purpose of the study was to compare the mode of operation and the vulnerability and risk to HIV experienced by women practising sex work in different settings, and when comparing across categories of FSWs, it would not be possible to distinguish whether the differences identified were due to differences between groups of FSWs or between districts.

In order to have an understanding of the mode of operation of the sex work industry which would be most likely to be ‘representative’ of the overall sex work industry in Karnataka, it was decided to select the most ‘average’ district of the five IBBA districts that also had a wide range of sex work settings. While it is likely that the most sex work settings would be identified in Bangalore Urban (the capital of Karnataka), the district ranks first in Karnataka on the human development index (HDI) (Government of Karnataka, 2005). Among the five districts, Belgaum has the median rank on the HDI<sup>11</sup>. In simple terms, Belgaum is not as poor/illiterate as Bellary, nor as rich/educated as Bangalore. Belgaum has a vibrant diverse sex work industry with a variety of sex work settings. Hence, I decided to conduct the qualitative study in Belgaum district, Karnataka state.

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<sup>11</sup> Out of the 27 districts in Karnataka, the ranks of the IBBA districts are as follows: Bangalore Urban 1, Shimoga 5, Belgaum 8, Mysore 14, and Bellary 18.

### 3.2.2. Identification of the sex work settings

A sex worker HIV intervention programme has been underway in Belgaum district since 1993, implemented by Belgaum Integrated Rural Development Society (BIRDS). For the past six years, BIRDS has been intensifying their targeted intervention among FSWs as a result of their partnership with KHPT with financial support from Avahan.

According to the mapping conducted by the BIRDS team, it is estimated that there are 9,566 female sex workers in Belgaum district. Of these, using the NACO typology which distinguishes FSWs by the main place of solicitation, 351 are brothel-based, 66 lodge-based, 5057 street-based, 1616 home-based and 2476 are practising sex work in other settings.

After selecting Belgaum as a study district, I had a series of discussions with programmers from KHPT and BIRDS (e.g. programme director, district coordinator, taluka (sub-district) coordinators), in order to understand the variety of settings where women practise sex work throughout Belgaum district. As a result of these conversations, I have identified thirteen sex work settings (distinguished by the main place of solicitation and the main place of sex): brothel to brothel (i.e. solicit clients in brothels and entertain them in brothels)<sup>12</sup>, lodge to lodge, street to brothel, street to lodge, street to street, street to rented room, street to home, home to home, phone-based, parlour girls, *dhaba* to *dhaba*, highway to highway and agricultural workers. In categorising female sex workers for the qualitative study I employed the typology I proposed based on the results of the IBBA analysis for Karnataka (see Chapter 4). The sex work settings were selected based on information provided by programmers working in the study district. Another option would have been to identify the settings based on the information provided by the female sex workers themselves. However, many FSWs are not well informed about other types of sex work

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<sup>12</sup> This classification of female sex workers and terminology is explained at length in Chapter 4.

operating in the same area and even less so from other localities in the same district. Hence, programmers were believed to have a better ‘overall’ image of the sex work industry in the district. During the interviews, study participants were attributed to a certain category of female sex work based on their reports of the current main place of solicitation and the main place of sex.

### 3.2.3. Sampling

The selection of participants was purposive (judgment-based) (Marshall, 1996) and hence non-random. Because it was ultimately intended to explore how the mode of operation and different settings in which women worked influenced their vulnerability and risk of HIV, the sample was stratified by type of sex work. Due to pragmatic concerns (i.e. available resources, total number of interviews to be analysed), an attempt was made to select 4 participants from each type of sex work documented throughout Belgaum district to try and get the range of experience of each type<sup>13</sup>. Table 3.4 specifies the type of sex work practised by each participant in the study. It was hoped that with 4 interviews per type at least partial data saturation would be reached. For some types however, I am aware this did not apply (e.g. phone-based sex work). Overall, the number of interviews conducted provided an informative range of answers and at the same time, for most sex work settings, a fairly clear and cohesive image of the mode of operation of the work and the risk experienced by the women.

Table 3.4. Type of sex work practiced by each participant in the qualitative study

Interview number	Type of sex work
Interview 1	Phone-based
Interview 2	Phone-based
Interview 3	Street to lodge

<sup>13</sup> Exceptions: 2 interviews with parlour girls, 3 with phone-based and home-to-home FSWs, and 5 with brothel-to-brothel and street-to-lodge FSWs.

Interview number	Type of sex work
Interview 4	Phone-based
Interview 5	Street to lodge
Interview 6	Street to lodge
Interview 7	Street to lodge
Interview 8	Lodge to lodge
Interview 9	Lodge to lodge
Interview 10	Street to rented room
Interview 11	Street to rented room
Interview 12	Street to rented room
Interview 13	Brothel to brothel
Interview 14	Home to home
Interview 15	Home to home
Interview 16	Street to rented room
Interview 17	Street to street
Interview 18	Lodge to lodge
Interview 19	Street to home
Interview 20	Street to street
Interview 21	Street to lodge
Interview 22	Indirect-secondary
Interview 23	Indirect-secondary
Interview 24	Street to home
Interview 25	Street to home
Interview 26	Home to home
Interview 27	<i>Dhaba to dhaba</i>
Interview 28	Street to home
Interview 29	Highway to highway
Interview 30	Lodge to lodge
Interview 31	Street to street
Interview 32	Street to street
Interview 33	Street to brothel
Interview 34	Brothel to brothel
Interview 35	Street to brothel
Interview 36	Brothel to brothel
Interview 37	Brothel to brothel
Interview 38	Brothel to brothel
Interview 39	Street to brothel
Interview 40	Street to brothel
Interview 41	Indirect-secondary
Interview 42	Indirect-secondary
Interview 43	<i>Dhaba to dhaba</i>
Interview 44	<i>Dhaba to dhaba</i>
Interview 45	Indirect-primary
Interview 46	Indirect-primary
Interview 47	<i>Dhaba to dhaba</i>
Interview 48	Highway to highway
Interview 49	Highway to highway
Interview 50	Highway to highway

### **3.2.4. Selection of study participants**

The study participants were women 18 years of age and above who admitted to practising sex work in Belgaum district. Because 80% of the estimated number of FSWs in Belgaum district are members of the sex worker collective Shakthi Sangha, the selection of the participants was done with the help of peer educators and other BIRDS staff. Prior to the interviews, the study was explained to BIRDS staff members, including the peer educators. Whenever the BIRDS staff was unable to put the interviewer in touch with possible participants from certain sex work settings e.g. in the case of parlour girls, the interviewer attempted to recruit participants into the study on her own, using her contacts within the sex work industry.

The peer educators and outreach workers told women in the community about the study and inquired about who wanted to participate in the study. The women who were interested/ willing to participate communicated their intention to the peer educators who in turn informed the interviewer. A meeting was set-up for the interview with the help of the peer educator at a place convenient for the participant. The interviews took place in the BIRDS drop-in-centres, at sex workers' residences, in restaurants and other public places, as long as the place allowed the interviewer to discuss with the participant in a quiet enabling environment.

### **3.2.5. Data collection**

The interviews were conducted by a female interviewer. Another option would have been to conduct the interviews myself with the help of a translator; while some researchers may employ this approach (Orchard, 2007) and I considered this option, I decided to take the help of a bilingual interviewer. The main advantages of doing the interviews with a translator would have been to discuss with the female sex workers myself, to have a higher

control over the questions asked and the extent of probing, and to have access to the raw data immediately. At the same time, this approach risked increasing participants' tendency to provide biased information. Based on my experience of working on research projects among female sex workers in Karnataka, some women already have a tendency to provide socially desirable answers to researchers' questions; I believe that the participants would have been greatly intimidated by my presence as a 'white foreigner' and might have 'censored' their answers. The interviewer chosen to conduct the interviews was highly experienced, and had worked with me on a previous research project among female sex workers as well as with the women as part of a non-governmental organization from the nearby district. She was trained in anthropological research, and was fluent in English, Kannada and Hindi. I chose to work with only one interviewer, as this minimised the amount of error associated with collecting data using interviewers. Moreover, whatever bias was introduced by the interviewer (e.g. through the questions asked) would be the same throughout all the interviews. Otherwise, differences noticed between interviews could have partially been attributed to differences between interviewers.

Prior to data collection, I trained the interviewer by explaining the objectives of the study and the interview guide and discussing interviewing techniques. I also arranged for her to do mock interviews with female sex workers prior to data collection, until she was comfortable with the topic and the interview guide and was ready to conduct interviews. Following each mock interview (which was audio taped), she translated the interview orally and we discussed in detail the questions asked and other possible questions/ probes that could have been asked.

I designed the interview guide, which was semi-structured and provided the interviewer with enough guidance on the topics to be explored during the interview, without imposing on her which questions to ask (Appendix A). The participants were asked

about the way they practise sex work at present and in the past and about various vulnerability factors. The interviews were generally conducted in one sitting, were audio taped and were conducted in Kannada (the local language in Karnataka), with the exception of one interview that was conducted in Hindi. In addition, I encouraged the interviewer to keep notes regarding the place of the interview, the participant's clothing and demeanour and any other impressions about the participant and the information provided; this information provided a context to the data collected during the interview which was helpful during data analysis.

Data collection took place in March-April 2009. In the first few days of data collection, I arranged for the translator to translate the interviews into English soon after their completion, so that I can ensure that all the topics were adequately covered and to give feedback to the interviewer on the interviewing technique. For the remaining time of the data collection, I ensured data quality by discussing in detail with the interviewer at the end of each day about each interview completed.

The qualitative data were translated and transcribed by a female translator trained in anthropology and experienced in sex work research, which ensured an accurate high-quality translation of the data. Interviews were translated, transcribed and sent to me shortly after they were conducted and I read them as soon as I received them. If I found that the interviews lacked information about a certain topic, I requested the interviewer to go back to the respective study participant and complete the interview; while the identity of the participants was never recorded, the interviewer was able to do so given the number of participants and the short period of time between the interview and its translation. I read the interviews as I received them from the translator. Once all the interviews were translated, I read them once again, identified the sections I was not clear about in terms of their exact meaning, and requested the translator to revisit the translation or to provide clarifications.

While the transcribed interview notes were not checked by a second translator, this approach improved the quality of translation of the qualitative data.

### **3.2.6. Ethical issues**

I obtained approval of the study protocol by ethical review boards of St. John's Medical College, Bangalore and University College London, England. The study was anonymous, without recording any names or personal identifiers. All participants were 18 years old or above; minors were not recruited for the qualitative study. The interviewees were not offered any financial compensation for their participation, which was voluntary. Informed consent (Appendix B) was obtained from participants and confidentiality of responses ensured.

### **3.2.7. Data analysis**

As explained in section 3.2.5, I first read each interview as soon as it was translated and then once all the interviews were translated. After the translation was clarified and finalized, I read the interviews once again while coding them using Atlas.ti 5.0 software; the code list was developed while reading the interviews. I analysed the interviews and summarized the main results in June-August 2009.

Content analysis focused on the thematic areas explored in the interviews. In order to understand the mode of operation of each sex work setting, I examined the following thematic areas: the place and mode of solicitation of clients, the place where clients are entertained, the network operators and the women's level of autonomy. I discuss the results of this analysis in Chapter 6. In addition, an attempt was made to understand the underlying factors which can explain the variation in HIV risk experienced by women working in different sex work settings. To this end, I explored the following thematic areas: the rate

charged by sex workers and the income from sex work, the presence of network operators, the autonomy enjoyed by the women, the experience of violence and harassment from various types of perpetrators, the main types of clients and their characteristics, the alcohol consumption of the women and their clients, the place and circumstances of condom negotiation, the exposure to the HIV prevention programme, the availability of condoms and the sex workers' condom negotiation skills. I present the results of this analysis in Chapter 7.

### **3.3. Timeline**

I conducted a first review of the literature on the typology of female sex work in India between November 2007 and May 2008. In the months following the review of the literature, I finalized the research questions of the thesis, obtained permission from Avahan to analyse the IBBA datasets, and conducted a preliminary analysis of the IBBA data from Karnataka state. I presented the results of the literature review and the preliminary analysis during the PhD upgrade examination in January 2009. In the following months I finalized the analysis of the IBBA for the three states and the details of the qualitative study. In March-April 2009 I coordinated the collection of the qualitative data and started its preliminary analysis. In the summer of 2009 I analysed the interview data collected among female sex workers from Belgaum district, Karnataka state. I wrote parts of the thesis throughout 2009 and finalized the first draft of the thesis by January 2010. Based on the feedback received during the PhD viva in April 2010, I undertook a number of revisions. In May-July 2010 I widened the search for the literature on the female sex work typology in India by including additional search engines (section 2.1), conducted an additional review of the literature on female sex work in India in order to identify HIV risk factors (section 2.2), and reviewed possible methods to develop typologies (section 2.3). In August-October

2010 I re-analysed the IBBA datasets based on the results of this review of the literature and the examiners' comments. I also edited Chapters 6 and 7 (presenting the results of the qualitative study) and finalized the second draft of the thesis by February 2011.

I was not involved in the design or the implementation of the quantitative survey; I obtained permission from Avahan, the funding organisation, to analyse the survey data (provided merged, cleaned and with attached weights). I designed the analysis plan of the IBBA data, prepared the variables for the analysis, conducted all the analyses and interpreted the results. I designed the qualitative study and coordinated the data collection. I analysed and interpreted the qualitative data (collected by a local interviewer and then translated into English).

The present thesis benefits from having used mixed methodology. In such studies, there are different approaches to the sequence of the quantitative and qualitative components, depending on the research question and the quality of the data already available about the population under study. Some researchers first collect qualitative data and based on its results design the quantitative component. For example, this was the approach chosen by Shahmanesh et al. (2009); this was mainly necessary because little was known about the female sex work industry in Goa prior to this study, including mapping. Other researchers choose to first conduct the quantitative survey, analyse the data and based on the results decide the issues that need to be explored qualitatively. This was the approach chosen by the Payana study conducted among female sex workers in Karnataka state (Karnataka Health Promotion Trust, 2008); in this case there was good understanding about the sex work industry in the study area and some data had already been collected previous to the quantitative survey. In this study, following the review of the literature on the female sex work typology in India, I decided to analyse the IBBA datasets as they offered a unique opportunity to conduct analyses on the typology of female sex work using

biological and behavioural survey data among a representative sample of female sex workers. While the quantitative analysis showed interesting results, due to its nature and limitations (e.g. mostly close-ended questions, limited topics explored) it also left some questions unanswered. In this context, a qualitative study was undertaken to complement the quantitative analysis and find explanations for some of its findings.

## **Chapter 4. Developing an evidence-based female sex work typology using data from Karnataka**

The chapter discusses the results of the analysis described in the previous chapter used for developing evidence-based typologies of female sex work. The analysis presented here uses the IBBA data collected among female sex workers from Karnataka state.

In this chapter I demonstrate a framework for devising an evidence-based typology of female sex work in the context of HIV which explicitly takes account of HIV risk. As outlined in Chapter 3, the framework development consists of three stages. In Stage 1, I conduct univariate analyses of possible risk factors and bivariate analyses by examining their association with HIV and STI prevalence. In Stage 2, I identify the risk factors of HIV and STI status in addition to place of solicitation and district using multivariate analyses. In Stage 3, I employ the sex work typology derived based on place of solicitation and the strongest risk factor of HIV and STI respectively (selected in Stage 2) in order to assess which female sex workers experience the highest risk.

I begin by presenting the results of the analysis in section 4.1, followed in section 4.2 by a discussion of the results and in section 4.3 by a commentary of the limitations of the analysis.

### **4.1. Results**

The methods for data collection and statistical analysis have been described in Chapter 3.

Table 4.1 presents the results of Stage 1 of the analysis i.e. univariate and bivariate analysis. As mentioned in Chapter 2, study participants were enrolled from five districts: Mysore (17%), Bangalore Urban (18%), Shimoga (20%), Bellary (21%) and Belgaum

(23%). FSWs have an average age of 31 years, with 44% of them being 18-29 years, 40% 30-39 years and 16% over 40 years. Only 33% of FSWs can read and write. Over 60% of FSWs do other work in addition to sex work. While a third of FSWs are married, the rest are unmarried (16%), have been married previously (45%) or other (7%). Regardless of their marital status, 65% of FSWs have a regular partner.

The mean age at sexual debut is 16 years, with 72% of FSWs having their first sexual contact before the age of 18 years. The mean age of entry into sex work is 24 years, with 54% of FSWs starting sex work before the age of 25 years. Consequently, on average FSWs have been practising sex work for 6.6 years: 21% for 1 year or less, 31% for 2-4 years, 23% for 5-9 years, and 26% for 10 or more years. Over half of FSWs solicit most of their clients in public places ('the street'), one third in their own homes and 11% in brothels. Clients are entertained in FSWs' homes (44%), lodges (24%), brothels (12%), rented rooms (11%) or public places (10%). FSWs have an average of 45 clients per month and charge 168 Rupees per sex contact (65% less than 200 Rupees). The women report that on average 41% of their clients are regular clients (4.1 out of 10), with half of the women having 0-3 regular clients out of 10 clients. Only 18% of FSWs have migrated for the purpose of sex work.

Inconsistent condom use is high and varies by type of partner, from 25% with occasional clients, 42% with regular clients and 75% with regular partners. Overall, FSWs reported an average of 7 unprotected sexual contacts per month. Only 12% report ever having had anal sex and 6% report group sex in the previous month. One third of FSWs consume alcoholic beverages at least once per week. 13% of FSWs were beaten or forced to have sex in the past year. As many as 40% of FSWs report having had STI symptoms in the past year.

Table 4.1. Univariate and bivariate analysis of risk factors by HIV and STI prevalence, Karnataka

Variable	Total		HIV		STI	
	N	%	%	p value	%	p value
<b>District</b>						
Belgaum	555	23.4	33.9	<0.001	11.3	<0.001
Bellary	491	20.7	15.7		8.4	
Shimoga	481	20.3	9.7		9.5	
Bangalore Urban	434	18.3	12.7		17.3	
Mysore	408	17.2	26.1		27.4	
<b>Age</b>						
18-24 years	450	19.0	19.9	0.637	20.1	<0.001
25-29 years	593	25.0	19.6		13.5	
30-34 years	463	19.5	22.0		17.1	
35-39 years	488	20.6	17.3		10.2	
40-65 years	375	15.8	19.1		8.9	
Mean	2368	30.9	-		-	
<b>Can read and write</b>						
No	1591	67.2	21.9	0.001	15.8	0.019
Yes	777	32.8	15.1		10.9	
<b>Other work than sex work</b>						
No	890	38.0	22.5	0.036	19.3	<0.001
Yes	1454	62.0	18.1		11.4	
<b>Marital status</b>						
Unmarried	366	15.5	17.5	<0.001	12.9	0.064
Married	783	33.2	13.7		12.5	
Ex-married	1050	44.6	23.1		16.4	
Other ( <i>Devadasis</i> )	158	6.7	31.0		8.3	
<b>Has a regular partner</b>						
No	838	35.4	25.9	<0.001	17.2	0.017
Yes	1530	64.6	16.3		12.6	
<b>Age at first sex contact</b>						
<14 years	533	22.6	20.6	0.058	16.2	0.724
14-15 years	701	29.7	23.2		13.3	
16-17 years	446	18.9	19.3		13.0	
18-19 years	427	18.1	15.9		14.0	
20+ years	252	10.7	14.5		14.8	
Mean	2359	15.83				
<b>Age at entry into sex work</b>						
<20 years	613	25.9	22.4	0.195	13.5	0.563
20-24 years	662	28.0	20.4		14.9	
25-29 years	563	23.8	18.6		15.6	
30-34 years	316	13.4	14.5		10.7	
35+ years	211	8.9	20.3		15.0	
Mean	2365	24.4	-		-	
<b>Duration in sex work</b>						
0-1 year	493	20.9	10.4	<0.001	20.3	<0.001
2-4 years	722	30.5	21.0		15.3	

Variable	Total N	%	HIV %	p value	STI %	p value
5-9 years	535	22.6	24.1		13.7	
10-14 years	275	11.7	25.4		8.9	
15+ years	339	14.3	18.2		6.5	
Mean	2364	6.58	-		-	
Main place of solicitation						
Home	806	34.1	13.5	<0.001	7.9	0.001
Brothel	258	10.9	33.5		13.6	
Street	1230	52.0	21.6		18.1	
Other	72	3.1	12.8		20.3	
Main place of sex						
Home	1026	43.3	14.3	<0.001	9.3	<0.001
Rented room	249	10.5	14.6		13.5	
Lodge	558	23.6	28.0		25.7	
Brothel	271	11.5	31.9		13.8	
Street	234	9.9	17.6		11.3	
Other	29	1.2	10.1		3.4	
Monthly client volume						
1-15 clients	494	21.1	15.4	0.006	10.5	<0.001
16-30 clients	567	24.2	16.9		11.5	
31-45 clients	437	18.7	18.4		11.7	
46-60 clients	365	15.6	21.9		17.0	
61+ clients	478	20.4	26.6		21.5	
Mean	2340	44.6	-		-	
Fee per sex contact						
<100 Rs	744	31.6	25.7	0.001	8.9	0.004
100-199 Rs	792	33.7	17.6		14.9	
200-299 Rs	361	15.4	19.5		17.0	
300-399 Rs	200	8.5	16.3		17.1	
400+ Rs	256	10.9	12.8		20.2	
Mean	2353	168.2	-		-	
Number of regular clients out of 10						
0-1 clients	445	18.9	23.4	0.021	18.6	0.038
2-3 clients	735	31.2	18.2		12.8	
4-5 clients	502	21.3	23.4		11.1	
6-10 clients	671	28.5	16.3		15.4	
Mean	2352	4.08	-		-	
Ever migrated for sex work						
No	1948	82.4	18.1	0.005	14.7	0.153
Yes	417	17.6	27.0		11.4	
Inconsistent condom use with occasional clients*						
No	1456	74.8	19.9	0.013	12.4	0.169
Yes	491	25.2	13.2		9.2	
Inconsistent condom use with regular clients						
No	1316	58.3	21.7	0.073	12.4	0.135

Variable	Total N	%	HIV %	p value	STI %	p value
Yes	942	41.7	17.1		15.6	
Inconsistent condom use with regular partners						
No	376	24.6	16.8	0.816	8.6	0.078
Yes	1152	75.4	16.2		13.9	
Number of unprotected sex contacts per month						
0	1342	57.9	21.7	0.054	12.9	0.019
1-10	496	21.4	15.2		12.0	
11+	481	20.8	18.8		20.0	
Mean	2320	6.91	-		-	
Ever had anal sex						
No	2088	88.1	19.9	0.424	14.1	0.765
Yes	281	11.9	17.4		14.9	
Had group sex in last month*						
No	1848	94.4	18.1	0.749	10.9	0.003
Yes	110	5.6	19.8		21.5	
Alcohol consumption*						
Less than 1 per week/ Never	1210	66.6	17.1	0.047	8.5	<0.001
At least 1 per week	606	33.4	22.0		18.0	
Beaten or forced to have sex in the past year*						
No	1703	87.0	18.2	0.987	11.6	0.686
Yes	255	13.0	18.3		10.6	
Reported STI symptoms in the past year						
No	1422	60.0	19.2	0.625	13.6	0.421
Yes	946	40.0	20.3		15.0	
HIV knowledge*						
Low (0-2 questions)	520	26.6	15.0	0.187	10.9	0.372
Medium (3-4 question)	577	29.5	18.3		13.4	
High (5-6 questions)	860	43.9	20.0		10.4	
Mean	1958	3.63	-		-	
Ever attended the programme clinic						
No	743	31.5	17.6	0.179	16.5	0.041
Yes	1620	68.6	20.5		13.0	
Ever received the 'grey pack'						
No	967	41.2	17.2	0.030	16.9	0.007
Yes	1382	58.8	21.5		12.2	
Ever visited the drop-in-centre						
No	1384	58.8	19.3	0.676	13.3	0.323
Yes	969	41.2	20.1		15.4	
Ever contacted by peer educator						
No	434	18.3	13.1	0.006	15.9	0.288
Yes	1930	81.7	21.1		13.7	
Ever seen a condom demonstration						
No	480	21.7	14.8	0.039	17.9	0.015

Variable	Total N	%	HIV %	p value	STI %	p value
Yes	1735	78.3	20.9		12.4	
Program exposure (5 above activities)						
0-1 activity	506	21.4	15.7	0.091	17.4	0.042
2-3 activities	473	20.0	19.5		15.0	
4-5 activities	1386	58.6	21.1		12.5	
Mean	2364	3.20	-		-	
Is a member of a collective*						
No	1677	86.0	17.7	0.205	12.1	0.024
Yes	274	14.0	21.7		7.1	
Total	2312	100.0	19.6	-	14.2	-

\* Question not asked in Mysore district

FSWs have a moderate level of knowledge about HIV/AIDS (mean 3.6, range 0-6), with 27% of them having low knowledge (answered correctly 0-2 out of 6 questions), 30% medium knowledge (3-4 questions) and 44% high knowledge (5-6 questions). FSWs seem to have high levels of exposure to HIV programme activities: 69% attended the clinic, 59% received the ‘grey pack’, 41% visited the drop-in-centre, 82% were contacted by the peer educator and 78% have seen a condom demonstration. Overall, 59% of FSWs were exposed to 4-5 of the five above-mentioned programme activities. Sex workers’ collective membership is fairly low, with only 14% of FSWs reporting being collective members.

Following the univariate analysis, I examined the association between each of the variables discussed above and HIV and STI status respectively. First I present the results of the bivariate analysis of HIV status, followed by the results of the analysis of STI status.

HIV prevalence varies by several socio-demographic characteristics. The percentage of female sex workers who are HIV positive varies by district from 10% in Shimoga to 34% in Belgaum. Illiterate female sex workers tend to be HIV positive in larger numbers compared to their counterparts (22% vs. 15%). 23% of the women who only do sex work are HIV positive compared to 18% of those who have other sources of income apart from sex work. HIV prevalence varies by marital status, ranging from 14% of married

FSWs, 18% of unmarried women, 23% of divorced/ widowed/ separated FSWs, and 31% of women with other marital status (mostly *Devadasis*). Regardless of their marital status, female sex workers who have a regular partner have a lower HIV prevalence compared to their counterparts (16% vs. 26%). Age is not associated with HIV prevalence and age at sexual debut is borderline significantly associated with HIV status ( $p=0.058$ ).

Table 4.1 also shows that a number of sex work-related characteristics are significantly associated with HIV status. While age at entry into sex work is not associated with HIV status, FSWs have a significantly different HIV prevalence depending on the duration of sex work practice, ranging from 10% among FSWs doing sex work for 1 year or less and 25% of those doing sex work for 10-14 years. 34% of FSWs who solicit clients in brothels are HIV positive, compared to 22% of those soliciting clients in public places and 14% in homes. In terms of the main place of sex, the highest HIV prevalence is registered among FSWs who entertain most of their clients in brothels (32%) and lodges (28%). Monthly client volume is positively associated with HIV prevalence, ranging from 15% among FSWs with 1-15 clients per month to 27% among FSWs with 61 clients per month or more. The fee charged per sexual contact is negatively associated with HIV status, with 26% of FSWs charging less than 100 Rupees per sex act being HIV positive. HIV prevalence is also associated with the number of regular clients a female sex worker has ( $p=0.021$ ). 27% of women who migrated for the purpose of sex work are HIV positive compared to 18% of those who only practised sex work in the same place.

In terms of safe sex practice, 20% of FSWs who use condoms consistently with occasional clients are HIV positive compared to 13% of their counterparts. 22% of FSWs who consume alcoholic beverages at least once per week are HIV seropositive compared to 17% of those who drink alcohol less than once per week. However, HIV status is not associated with inconsistent condom use with regular clients and regular partners, anal sex,

group sex, or experience of violence or forced sex. FSWs who reported STI symptoms in the previous year have similar HIV prevalence as their counterparts.

HIV prevalence is higher among FSWs who engaged in some programme activities i.e. received the 'grey pack' (22% vs. 17%), contacted by the peer educator (21% vs. 13%), seen a condom demonstration (21% vs. 15%). HIV status is not associated with FSWs' level of knowledge about HIV/AIDS or with other programme activities i.e. attending the clinic, visiting the drop-in-centre, being a member of a sex workers' collective.

Columns 6 and 7 of Table 4.1 present the results of the bivariate analysis of STI status. The highest HIV prevalence is registered in Mysore (27%) and the lowest in Bellary district (8%). In terms of other socio-demographic characteristics, FSWs have higher STI prevalence if they are younger (20% of 18-24 years vs. 9% of 40-65 years), illiterate (16% vs. 11%), do not do any other work apart from sex work (19% vs. 11%), and do not have a regular partner (17% vs. 13%). However, STI status is not significantly associated with marital status and age at sexual debut.

In terms of sex work-related characteristics, FSWs have higher STI prevalence if they have been in sex work for less time (0-1 year - 20% vs. 15+ years - 7%), solicit clients in public places (18% vs. 14% in brothels and 8% in homes), entertain their clients in lodges (26% vs. 14% in brothels or rented rooms, 11% in public places and 9% in homes), have more clients (61+ clients - 22% vs. 1-15 clients - 11%), and charge more per sex act (400+ Rs - 20% vs. <100 Rs - 9%). STI status also varies depending on the number of regular clients a female sex worker has ( $p=0.038$ ). STI prevalence is not significantly associated with the age at entry into sex work and the experience of migration for the purpose of sex work.

FSWs who had 11 or more unprotected sexual contacts per month were STI positive in larger numbers compared to those with fewer unprotected sexual contacts (20% vs.

12%). 22% of FSWs who reported having had group sex in the previous month were positive for STIs compared to 11% of their counterparts. A higher percentage of FSWs who drink at least once per week were STI positive compared to those who consumed less alcohol (18% vs. 9%). STI status was not associated with inconsistent condom use with any type of sexual partner, anal sex, or experience of violence or forced sex in the previous year. Moreover, there was no association between study participants' reports of STI symptoms in the previous year and their current STI status (as indicated by biological data).

Unlike in the case of HIV, FSWs who are positive for STIs are overrepresented among FSWs who do *not* participate in programme activities e.g. attended the clinic (17% vs. 13%), received the 'grey pack' (17% vs. 12%), seen a condom demonstration (18% vs. 12%), sex workers' collective membership (12% vs. 7%). However, there is no association between STI status and FSWs' level of knowledge about HIV/AIDS and participation in other programme activities such as visiting the drop-in-centre and being contacted by a peer educator.

In Stage 2 of the analysis, I conducted stepwise forward logistic regressions ( $p < 0.05$ ) with HIV (Table 4.2) and STI status (Table 4.3) as outcome variables. The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, age at sexual debut, duration in sex work, monthly client volume, fee charged per sex act, number of regular clients, unprotected sexual contacts per month, anal sex, having a regular partner, reported STI symptoms, and programme exposure. The main place of solicitation and district were specified as 'fixed' independent variables, as they represent information that programmers can identify without direct contact with the female sex workers. The purpose of this analysis was to identify significant predictors of HIV and STI status after adjustment

for place of solicitation and district and rank them according to their relative importance in the models.

Table 4.2 presents the results of the initial model with HIV prevalence as an outcome variable. In addition to the place of solicitation and district which were ‘fixed’ variables, the only significant predictors of HIV status are the main place of sex ( $p < 0.001$ ) and having a regular partner ( $p = 0.001$ ). Between these two variables, the main place of sex is the stronger predictor of HIV status, as indicated by the fact that it was the first variable to be selected in the stepwise model.

Table 4.2. Results of stepwise forward logistic regression model with HIV prevalence as an outcome variable, Karnataka (final model); variables listed in the order they were added to the model, except for place of solicitation and district which were fixed

Variable	Subcategory	AOR	95% CI		p value
Place of solicitation	Home	1.00			
	Brothel	1.94	1.14	3.29	0.063
	Street	1.19	0.67	2.10	
	Other	0.85	0.45	1.59	
District	Shimoga	1.00			
	Belgaum	3.49	2.14	5.67	<0.001
	Bellary	1.59	0.94	2.69	
	Bangalore Urban	0.96	0.56	1.67	
	Mysore	1.96	1.21	3.20	
‘Place of sex’	Street to home & Other	1.00			
	Street to rented room	0.98	0.49	1.96	<0.001
	Street to lodge	2.12	1.35	3.36	
	Street to street	1.12	0.56	2.25	
Has a regular partner	No	1.00			
	Yes	0.64	0.49	0.83	0.001

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, age at sexual debut, duration in sex work, monthly client volume, fee charged per sex act, number of regular clients, unprotected sexual contacts per month, anal sex, having a regular partner, reported STI symptoms, and programme exposure.

Table 4.3 shows the results of the initial model with STI prevalence as an outcome variable. Except for place of solicitation and district, the following variables were shown to be significant predictors of STI status (in the order in which they were added to the model, based on their p values at entry): main place of sex ( $p<0.001$ ), literacy ( $p=0.004$ ), having a regular partner ( $p=0.005$ ), monthly client volume ( $p=0.012$ ), duration in sex work ( $p=0.025$ ), and fee charged per sex act ( $p=0.012$ ).

Table 4.3. Results of stepwise forward logistic regression model with STI prevalence as an outcome variable, Karnataka (initial model); the variables are listed in the order they were added to the model, except for place of solicitation and district which were fixed

Variable	Subcategory	AOR	95% CI		p value
Place of solicitation	Home	1.00			
	Brothel	0.99	0.36	2.69	0.752
	Street	0.83	0.49	1.40	
	Other	1.20	0.61	2.34	
District	Bellary	1.00			
	Belgaum	1.19	0.63	2.25	0.014
	Shimoga	1.15	0.60	2.20	
	Bangalore Urban	1.43	0.73	2.80	
	Mysore	2.43	1.29	4.57	
'Place of sex'	Street to home & Other	1.00			
	Street to rented room	1.39	0.71	2.71	0.002
	Street to lodge	2.36	1.47	3.81	
	Street to street	1.72	0.73	4.05	
Can read and write	No	1.00			
	Yes	0.56	0.38	0.83	0.004
Has a regular partner	No	1.00			
	Yes	0.62	0.45	0.84	0.003
Monthly client volume (in 10 clients)		1.04	1.02	1.07	0.001
Duration in sex work (years)		0.95	0.92	0.98	0.001
Fee per sex contact (in Rs100)		1.13	1.03	1.24	0.012

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, age at sexual debut, duration in sex work, monthly client volume, fee charged per sex act, number of regular clients, unprotected sexual contacts per month, anal sex, having a regular partner, reported STI symptoms, and programme exposure.

In order to take into account possible interaction effects which may exist between the variables selected in the models I computed interaction terms between each of the variables listed in Tables 4.2 and 4.3 respectively and added them one at a time to the initial model; the interaction terms significant at the  $p < 0.05$  level were then added together to the initial model selection process. In the case of the stepwise forward logistic regression with HIV prevalence as outcome variable, none of the interaction terms computed were significant at  $p < 0.05$  level. Hence, the final model after taking into account possible interaction terms is the model presented in Table 4.2.

Table 4.4 presents the results of stepwise forward logistic regression ( $p < 0.05$ ) with STI prevalence as outcome variable, after taking into account possible interaction terms (adjusted for all the variables listed in the table) (final model). Three interaction terms are significant at  $p < 0.05$  level: duration in sex work and having a regular partner ( $p = 0.014$ ), fee per sex act and place of sex ( $p = 0.010$ ), and district and literacy ( $p = 0.044$ ). Duration in sex work is not associated with STI acquisition among FSWs without a regular partner, but among those with a partner a longer duration in sex work is associated with a reduction in the prevalence of STIs. Among FSWs who solicit sex in public places there is an increased risk of STIs with a higher fee for those who have sex at home, however this association is somewhat stronger among those who have sex in rented rooms and the fee is not associated with STI risk for FSWs who have sex in lodges or on in public places. While in some districts illiterate FSWs are more likely to have an STI (i.e. Belgaum, Shimoga, Bangalore Urban), in Mysore literacy is not associated with STI prevalence.

Table 4.4. Results of stepwise forward logistic regression model with STI prevalence as an outcome variable, while controlling for significant interaction terms, Karnataka (final model)

Variable	Subcategory	AOR	95% CI		p value
Place of solicitation	Home	1.00			
	Brothel	1.03	0.38	2.78	0.545
	Street	0.74	0.43	1.29	
	Other	1.22	0.62	2.42	
District	Bellary	1.00			
	Belgaum	1.27	0.61	2.66	
	Shimoga	1.49	0.73	3.01	
	Bangalore Urban	2.26	1.10	4.65	
	Mysore	2.29	1.19	4.42	
'Place of sex'	Street to home & Other	1.00			<0.001
	Street to rented room	0.93	0.32	2.71	
	Street to lodge	4.28	2.15	8.53	
	Street to street	2.61	1.15	5.92	
Can read and write	No	1.00			0.434
	Yes	0.69	0.27	1.76	
Monthly client volume (in 10 clients)		1.04	1.02	1.07	0.001
Fee per sex contact (in Rs100)		1.20	1.08	1.33	0.001
Duration in sex work (years)		0.98	0.94	1.01	0.163
Has a regular partner	No	1.00			0.357
	Yes	0.84	0.57	1.22	
Duration in sex work*Having a regular partner		0.93	0.88	0.99	0.014
Fee per sex contact*'Place of sex'	Street to home& Other	1.00			0.010
	Street to rented room	1.12	0.88	1.42	
	Street to lodge	0.79	0.67	0.94	
	Street to street	0.75	0.43	1.31	
District*Literacy	Belgaum	1.00			0.044
	Bellary	1.12	0.26	4.83	
	Shimoga	0.57	0.17	1.99	
	Bangalore Urban	0.40	0.13	1.20	
	Mysore	1.45	0.47	4.48	

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, age at sexual debut, duration in sex work, monthly client volume, fee charged per sex act, number of regular clients, unprotected sexual contacts per month, anal sex, having a regular partner, reported STI symptoms, programme exposure, duration in sex work\*having a regular partner, fee per sex contact\*place of sex, and district\*literacy.

The results of the analyses conducted in Stage 2 indicate that the main place of sex is the strongest predictor of HIV and STI prevalence among female sex workers in Karnataka. Hence, for a typology which indicates the FSWs that experience the highest risk for HIV in Karnataka, the current typology which distinguishes based on FSWs' main place of solicitation can be extended to also incorporate information about their main place of sex. The resulting typology (Table 4.6) could consist of the following categories of FSWs (resulting from the overlap of the place of solicitation and the place of sex): home to home (solicit and entertain clients in their homes - 11%), brothel to brothel (solicit and entertain clients in brothels – 32%), street to home (solicit clients in public places and entertain them in their homes – 11%), street to rented room (solicit clients in public places and entertain them in rented rooms – 9%), street to lodge (solicit clients in public places and entertain them in lodges – 22%), street to street (solicit and entertain clients in public places – 9%), and other (7%).

The results of Stage 3 of the analysis are presented in Tables 4.5 and 4.6. Table 4.5 takes into account the fact that the main place of solicitation and the 'main place of sex' are 'intertwined' in order to deal with their colinearity. I fitted the same models as in Tables 4.2 and 4.3 but reparameterised the two variables by replacing them with a single combined factor (explained in the previous paragraph). Table 4.5 presents the resulting AORs: street to lodge FSWs have the highest HIV prevalence (AOR 2.52, 95% CI 1.72-3.71 compared to home to home FSWs), followed by brothel to brothel FSWs (AOR 1.94, 95% CI 1.14-3.29). Street to lodge FSWs also have the highest STI prevalence (AOR 1.95, 95% CI 1.21-3.14 compared to home to home FSWs), followed by street to street FSWs (AOR 1.42, 95% CI 0.69-2.93).

Table 4.5. Results of stepwise forward logistic regression model with HIV status and STI status as outcome variables and with place of solicitation and place of sex entered as one composite variable, Karnataka

	HIV status			STI status		
	AOR	95% CI	p value	AOR	95% CI	p value
Home to home	1.00			1.00		
Brothel to brothel	1.94	1.14 3.29	<0.001	0.99	0.36 2.69	0.001
Street to home	1.19	0.67 2.10		0.83	0.49 1.40	
Street to rented room	1.17	0.66 2.08		1.14	0.63 2.07	
Street to lodge	2.52	1.72 3.71		1.95	1.21 3.14	
Street to street	1.34	0.79 2.27		1.42	0.69 2.93	
Other	0.85	0.45 1.59		1.20	0.61 2.34	

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation & main place of sex (fixed variable), district (fixed variable), age, literacy, doing other work than sex work, marital status, migration for sex work purpose, age at sexual debut, duration in sex work, monthly client volume, fee charged per sex act, number of regular clients, unprotected sexual contacts per month, anal sex, having a regular partner, reported STI symptoms, and programme exposure. With exception of the main place of solicitation and the main place of sex, the other variables selected in the final models are the same as the ones presented in Tables 4.2 and 4.3 and have the same values; hence were not listed here again.

Following this analysis, an attempt was made to group the categories of the full typology of place of solicitation and place of sex into high, medium and low risk groups depending on their HIV and STI prevalence. In other words, I grouped the seven categories of the full typology into three groups with comparable prevalence according to ‘natural’ cut-offs. I first conducted crosstabulations between the full typology and HIV and STI prevalence respectively (Table 4.6). I recoded the typology according to the rank of each category by prevalence, with 1 having the highest prevalence. These ranked categories were then recoded into three-group variables. There are 15 different possible combinations: 1, 2, 3-7; 1, 2-3, 4-7; 1, 2-4, 5-7; 1, 2-5, 6-7; 1, 2-6, 7; 1-2, 3, 4-7; 1-2, 3-4, 5-7; 1-2, 3-5, 6-7; 1-2, 3-6, 7; 1-3, 4, 5-7; 1-3, 4-5, 6-7; 1-3, 4-6, 7; 1-4, 5, 6-7; 1-4, 5-6, 7; 1-5, 6, 7. I fitted one logistic regression model corresponding to each of the 15 possible reduced typologies, recorded the log likelihood of each model and selected the model with the highest log likelihood. This process was conducted separately for HIV and STI status as outcome variables.

As indicated in Table 4.6, the categories of the full typology can be ranked according to HIV prevalence as follows: 1 – brothel to brothel (34%), 2 – street to lodge (30%), 3 – street to street (19%), 4 – street to home (16%), 5 – home to home (14%), 6 – street to rented room (13%), 7 – other (11%). The model with the highest log likelihood (-1085.14) employed the 1-2, 3, 4-7 reduced typology. In order words, in terms of lifetime HIV risk, brothel to brothel and street to lodge FSWs are at highest risk, street to street FSWs are at medium risk, and street to home, home to home, street to rented room, and other FSWs are at low risk for HIV infection.

Table 4.6 also indicates that FSWs can be ranked according to their STI prevalence as follows: 1 – street to lodge (27%), 2 –street to rented room (14%), 3 – brothel to brothel (13%), 4 – street to street (12%), 5 – other (12%), 6 – street to home (10%), 7 – home to home (8%). The highest log likelihood (-856.13) was registered by the model employing the 1, 2-5, 6-7 reduced typology. Hence, in terms of their recent risky behaviour as indicated by their STI prevalence, street to lodge FSWs are at high risk, street to rented room, brothel to brothel, street to street, and other FSWs are at medium risk and street to home and home to home FSWs are at low risk.

Table 4.6. Typology of female sex work ‘place of solicitation and place of sex’ by HIV and STI prevalence, Karnataka

	N	%	HIV (%)	STI (%)		
				Total	Fee per sex act	
					≤100Rs (n=1273)	>100Rs (n=911)
Brothel to brothel	252	10.7	34.0	13.4	14.7	8.4
Home to home	745	31.6	14.0	8.1	6.6	11.6
Street to home	249	10.6	15.7	10.4	6.3	14.2
Street to rented room	203	8.6	12.7	14.2	7.8	16.7
Street to lodge	525	22.2	29.6	26.8	26.3	26.9
Street to street	215	9.1	19.1	12.3	12.7	10.4
Other	172	7.3	11.4	12.0	8.8	16.1

As previously indicated in Table 4.4, there is an interaction between 'place of sex' and 'fee per sex act' on the outcome variable STI status. Consequently, I examined the STI prevalence of the categories of the 'full' typology for low-fee and high-fee FSWs separately (median=100Rs) (Table 4.6). Regarding low-fee FSWs (100 Rs per sex act or less), results indicate that street to lodge women are at highest risk (26%), while street to home (6%), home to home (7%), street to rented room (8%), and other FSWs (9%) have the lowest risk for STI infection. In case of high-fee FSWs (more than 100 Rs per sex act), street to lodge women experience the highest risk (27%), and brothel to brothel (8%) and street to street FSWs (10%) the lowest risk for STI.

#### **4.2. Discussion**

NACO classifies female sex workers by their main place of solicitation and employs this typology as a proxy of HIV risk in its strategies and activities (National AIDS Control Organization, 2007a). The main place of solicitation is very important and useful in distinguishing between female sex workers because it allows identification without prior contact with the women and is appropriate from an outreach perspective. However, the main place of solicitation is not always the best predictor of female sex workers' HIV risk, despite its use for this purpose, and may not provide sufficient information to adequately capture the variation in risk. The analysis presented above builds on the existing typology by identifying the strongest additional predictor of HIV/STI prevalence and incorporating it along with place of solicitation into a revised 'full' typology of female sex work. The resulting categories of FSWs are grouped into high, medium and low risk groups to form a 'reduced' typology. Hence, I propose a method for devising typologies of female sex work which capture the variation between FSWs in terms of lifetime and recent HIV risk and give special status to place of solicitation.

The proposed method has been applied to IBBA data collected among female sex workers from Karnataka state. The analysis suggests that in Karnataka the typology of female sex work should distinguish between women based on the main place of solicitation and the main place of sex. This full typology categorises women into seven main categories of female sex workers which are outlined in Table 4.6. While there is an overlap between the place of solicitation and the place of sex in Karnataka with respect to brothel-based sex work, this is not the case for all categories. Women who solicit on the street have sex in a variety of locations and FSWs who entertain clients in the home solicit clients either in the home (home to home) or in public places (street to home). A similar typology scheme was applied to a study on risk for syphilis in Karnataka, which found that street to lodge FSWs were at highest risk for syphilis (Mishra et al., 2009). Other studies employed either the place of solicitation (Isac et al., 2007) or the place of sex (Blanchard et al., 2005) in order to classify Karnataka female sex workers.

Categorising female sex workers based on the place of solicitation alone, as it is currently recommended by NACO, results in a typology distinguishing between brothel, home and street solicitation. This typology obscures differences in the level of risk experienced by women who solicit clients in the street, depending on their place of sex. The revised typology identifies two categories of female sex workers at high lifetime HIV risk, those who solicit clients in the street and entertain them in lodges (street to lodge) and those who solicit and have sex in brothels (brothel to brothel), followed by FSWs who solicit and entertain clients in public places (street to street) who are at medium risk of HIV infection. Street to lodge FSWs also have the most risky recent sexual behaviour, as indicated by their STI prevalence. FSWs that either solicit or have sex in their own homes (home to home and street to home) have the lowest STI prevalence. While the proposed

typology is slightly differently ranked by STI risk if one distinguishes FSWs by their fees, street to lodge FSWs are at highest risk for STI infection regardless of their fees.

It is commonly believed that women working in brothels are at high risk of contracting HIV in India (Nag, 2006). This is partly because, due to their easy accessibility and identification, women working in red-lights areas in large cities like Mumbai, Delhi (Reed, 2001), Surat (Desai et al., 2003) and Kolkata (Bhattacharya & Senapati, 1994; Evans & Lambert, 1997; 2008; Gangopadhyay et al., 2005; Sarkar et al., 2005) are easily visible and have been widely researched, in terms of both HIV prevalence and other issues. However, this analysis highlights the risk of female sex workers who solicit clients in public places and have sex in lodges (street to lodge), who represent 22% of the sampled FSWs. These women experience high HIV and STI prevalence rates even compared to women who solicit in brothels, despite the fact that they have a substantially lower client volume (51 vs. 94 clients per month). They appear more likely to be new entrants into the sex work industry (45% of street to lodge and street to rented room FSWs practise sex work for 2 years or less, compared to 38% of street to home, 31% of brothel to brothel, 28% of street to street and 27% of home to home); therefore, they are likely to be particularly important for prevention efforts. It is likely that street to lodge FSWs are more difficult to reach by HIV prevention programmes either at the place of solicitation or of sex, compared to brothel-based FSWs. By definition, the location of brothels operating in any locality is well known by the general population and the programme staff. Because they work in brothels, sex workers openly admit to practising sex work, which minimises problems of identification for the programme staff. On the contrary, the lodges where sex workers take their clients are more difficult to identify and the women who do sex work there may be less willing to admit to it.

The two extremes in terms of the lifetime HIV risk associated with the sex work settings in Karnataka seem to be the lodge/ brothel as the highest risk locations and the own home/ rented room as the lowest risk. One possible explanation for this variation is the level of control and autonomy that can be exercised by female sex workers in these different settings. Women are likely to have the least autonomy and control in brothels and lodges and the highest when working from homes or rented rooms. However, there are important differences between brothels and lodges, in terms of how the level of control of the brothel madam or the lodge manager relates to the risk that FSWs are exposed to. Of note, there is great variation in HIV lifetime risk between ‘street to lodge’ and ‘street to rented room’ FSWs, despite the fact that both FSW types solicit clients in public places and entertain them in a place rented by the women on a client by client basis, the difference being that lodges are small hotels and the rooms are rented in private houses.

The situation of brothel-based FSWs in Karnataka is seemingly paradoxical, as they have the highest HIV prevalence, but medium STI rates. Moreover, they have the highest condom use (1.4 monthly unprotected sexual contacts, compared to 5.3 for street to rented room, 5.5 for home to home, 7.6 for street to home, 8.5 for street to street, and 11.2 for street to lodge FSWs). When interpreting the data on HIV prevalence, it should be taken into account that brothel-based sex workers have been working on average for more than 7 years and many could have been infected long before the survey was conducted, when their place of solicitation and/or sex may have been different. In order to properly interpret HIV prevalence data as it relates to the typology of sex work, I would need to know the places where the woman was soliciting and entertaining her clients at the time of HIV infection, information which would be difficult (if not impossible) to obtain<sup>14</sup>. The relatively low STI

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<sup>14</sup> When testing algorithms to allow accurate identification of recent HIV infection (i.e. incident cases) become available, this measure could be usefully incorporated.

prevalence found in brothels may be due to the higher condom use (as reported by FSWs), but also to the greater feasibility of administering presumptive periodic treatment and/or regular STI check-ups within a brothel setting, facilitated by the brothel madams. At the same time, brothel-based FSWs have a very high client volume which coupled with the higher HIV prevalence of their clients (as reported in client IBBA surveys conducted in Karnataka) would be another plausible explanation for their increased exposure to HIV.

While place of sex was shown to be the strongest predictor of HIV and STI prevalence after adjustment for place of solicitation and district, another important protective factor is having a regular partner. Similar findings were reported by Shahmanesh et al. (2009) who showed in the context of Goa that female sex workers who were positive for HIV and STI were less likely to have an intimate non-paying partner. At the same time, other researchers examined how regular partners expose female sex workers to violence, forced sex, financial exploitation and inconsistent condom use (Karandikar & Próspero, 2010; Panchanadeswaran et al., 2008), which in turn can affect their HIV and STI status.

With the exception of the main place of sex and having a regular sex partner, HIV and STI status have different risk factors, as they measure different aspects of risk i.e. lifetime and recent risk. Other significant risk factors of sexually transmitted infections among female sex workers in Karnataka are shorter duration in sex work, illiteracy, higher monthly client volume and higher fee charged per sexual contact. Karnataka FSWs have been shown to have higher prevalence of lifetime syphilis if they have been practising sex work longer (Mishra et al., 2009). Similarly, longer duration in sex work is associated with higher HIV prevalence among female sex workers from four South Indian states (Ramesh et al., 2008) and Manipur (Agarwal et al., 1999). At the same time, an inverse relationship between HIV status and duration in sex work was observed in an early study among female sex workers from Tamil Nadu (Simoes et al., 1993) and a study conducted among

trafficked FSWs from Mumbai, Maharashtra (Silverman et al., 2006). Illiterate female sex workers have been previously documented to have a higher risk of lifetime and active syphilis (Mishra et al., 2009) and HIV (Ramesh et al., 2008). Similarly, female sex workers' risk for lifetime and active syphilis (Mishra et al., 2009) and HIV (Agarwal et al., 1999; Ramesh et al., 2008) was shown to increase with the number of clients. The fee charged by female sex workers per sexual contact – a significant predictor of STI status in Karnataka as per this study – has also been employed to categorise FSWs (especially working in red-light areas) in West Bengal (Evans & Lambert, 2008; Kotiswaran, 2008; UNAIDS, 2000).

Some variables were shown not to be significant predictors of HIV status at the multivariate level i.e. after adjustment for a key set of factors. However, previous literature among female sex workers in India has provided evidence for the relationship between HIV prevalence and these variables e.g. age (Ramesh et al., 2008; Sarkar et al., 2008; Sarkar et al., 2005; Sarkar et al., 2006), literacy (Ramesh et al., 2008), marital status (Brahme et al., 2006; Ramesh et al., 2008), having another source of income besides sex work (Ramesh et al., 2008), age at sexual debut (Ramesh et al., 2008), duration in sex work (Agarwal et al., 1999; Ramesh et al., 2008; Silverman et al., 2006; Simoes et al., 1993), number of clients (Agarwal et al., 1999; Ramesh et al., 2008), reported sexually transmitted infections in the previous year (Sarkar et al., 2006), inconsistent condom use (Brahme, Mehta, Sahay, Joglekar, Ghate, Joshi, Gangakhedkar, Risbud, Bollinger, & Mehendale, 2006b), exposure to HIV intervention programmes (Bhave et al., 1995; Ramesh et al., 2010). Similarly, the analysis discussed in the previous section has shown insignificant relationships between a series of variables and STI prevalence which have been documented in previous studies e.g. age (Mishra et al., 2009; Shahmanesh et al., 2009), marital status (Mishra et al., 2009), migration for sex work purposes (Mishra et al., 2009), number of clients (Mishra et al.,

2009), reported STI symptoms (Shahmanesh et al., 2009), exposure to HIV intervention programmes (Bhave et al., 1995; Ramesh et al., 2010; Reza-Paul et al., 2008). However, there is large variability in the HIV and STI epidemics and the sex work industry across regions and this may affect the associations between these factors and HIV and STI prevalence depending on where the study is conducted. Also associations with these factors may have become weak after adjustment for other factors.

### **4.3. Limitations**

The multivariate analysis employed stepwise logistic regressions in order to identify the strongest predictors of HIV and STI prevalence after adjustment for place of solicitation and district and then construct ‘full’ derived typologies using place of solicitation and the strongest risk factor identified. The categories distinguished based on the cross-classifications of these two criteria are grouped into high, medium and low prevalence groups to form a ‘reduced’ typology. Some might argue for using more than two criteria for a typology and more or fewer than three groupings (or even allow the data to determine the number in some way); while these are possible options, the resulting typology would likely be cumbersome and consist of too many categories. Another approach would have been to employ a clustering method (e.g. cluster analysis, latent class analysis) in order to identify clusters of high, medium and low risk of FSWs. However, this approach would have been less useful programmatically, as it would have provided a list of characteristics helpful for indicating which FSWs are at high risk without prioritizing the place of solicitation. At the same time, while other classification methods could have been used to identify high risk factors of HIV/STI prevalence (e.g. discriminant analysis), logistic regression was chosen because it is more robust statistically and has fewer assumptions.

Some might argue that a method developing typologies of sex work that require good quality biological data collected among female sex workers has limited utility. Of note, as shown in this study, IBBA data are available from three south Indian states and similar surveys have been conducted in Maharashtra. Moreover, even if biological data are not available, the method can be applied using reported sexual behaviour data as measures of HIV risk.

The ability of the proposed typology of female sex work to accurately describe the sex work industry in Karnataka depends on the extent to which the IBBA sample is representative of the sex work population in the state. The sample was selected using as a sampling frame previous mapping data, which suggest that the main types of FSWs have been well represented. Another bias which could have affected the results of the analysis consists of the possibility that in certain sex work settings high risk FSWs were systematically recruited, while in others low risk FSWs were oversampled. This could result in either overestimating or underestimating the HIV risk of each category of sex workers. The IBBA has been conducted only in some districts of Karnataka and the sex work industry in the remaining districts may have slightly different compositions. The IBBA surveys have been conducted in urban areas, which make the data representative only of the population of urban female sex workers. Certain categories of female sex workers have not been included in the sampling frame of the IBBA, namely women who solicit mostly through phones, agents, massage parlours or bars.

HIV risk of female sex workers is assessed using HIV and STI prevalence. HIV prevalence is employed as a measure of lifetime risk. STI prevalence is used as an indicator of recent risky sexual behaviour. However, if the women undergo presumptive periodic treatment, this may result into a lower STI prevalence, without an actual change in sexual behaviour. Using two indicators of HIV risk adds complexity to the proposed approach, as

it allows examination of different aspects of risk. At the same time, this results in recommending two typologies, one helpful in indicating which FSWs are HIV positive and the second one the FSWs who have recent risky sexual behaviour (as indicated by their STI status).

It should be taken into account that the IBBA was not undertaken for the purpose of developing a typology of sex work, as this has implications for the analysis and the results, especially in terms of the items included in the questionnaire. For example, no information was collected in the survey regarding the labour relation between sex workers and the brothel madam or other network operators and hence this aspect was not explored in the analysis. There are differences between the questionnaire used in Mysore and the one used in the other four districts; a number of variables were excluded from the multivariate analysis, as the questions were not included in the Mysore questionnaire (i.e. group sex, alcohol consumption, experience of violence and forced sex, HIV knowledge, sex workers' collective membership).

While information about other aspects was collected by the survey, one needs to keep in mind the questions asked. The questions used to measure the main place of solicitation ("where do you generally solicit/ pick up/ get most of your clients") and the main place of sex ("where do you entertain most of your clients") leave room for interpretation. The questions do not specify a time period or the type of clients referred to. Moreover, if the study participants changed their place of solicitation and sex in the recent past, they may find it difficult to answer the question. The question regarding violence and forced sex ("in the past one year, were you ever beaten or otherwise physically forced to have sexual intercourse with someone even if you didn't want to") incorporates two questions in one; it is unclear which question participants actually answered and how to interpret their answers. The questions regarding participation in programme activities do

not measure participation frequency and the timeline is very broad e.g. “have you ever received a grey packet with 4 tablets (show the packet) at the clinic”; this affects the quality of the data about programme exposure. STI symptoms are measured by study participants’ reports on whether in the previous 12 months they suffered vaginal discharge, lower abdominal pain without diarrhoea or menses, and genital ulcers or sores. Their answers to these questions are subject to recall bias and difficulty in recognizing the above-mentioned symptoms or in mistaking them for something else. Recall bias may have also affected the answers to other questions expecting the participants to remember things from their relatively distant past.

In an Indian context, especially among lower caste people, it is common for people not to know their exact age. Given high illiteracy, many female sex workers also find it difficult to assess/ remember how old they were when certain things happened in their life. Hence, while extremely important, data regarding FSWs’ age, age at sexual debut and age at entry into sex work should be interpreted with caution; this issue can also affect the interpretation of the data on duration in sex work, as it is derived based on age and age at entry into sex work. Low literacy and mathematical skills also make it difficult for women to make estimates (as they require making a mental average), as is the case for the number of regular clients out of 10 clients, the number of clients per day/week, or the fee charged per sex act. In addition, as is often the case with interviewer surveys, there is a possibility that participants’ answers were affected by social desirability bias, especially with respect to sensitive questions such as extent of condom use, experience of anal sex or group sex, number of clients, and consumption of alcoholic beverages.

Due to the geographic variation in the sex work industry, the typology proposed for Karnataka is unlikely to be directly transferable to other states in India. The sex work industry in other states may be differently organized and the women may experience

different risks and vulnerabilities; thus other ways of categorising sex workers may be more applicable. In order to examine state-wise differences I will be applying the proposed method to IBBA data from other high HIV prevalence states in south India (Andhra Pradesh and Tamil Nadu). This represents the focus of the following chapter.

## **Chapter 5. Developing female sex work typologies using data from Andhra Pradesh and Tamil Nadu**

In this chapter, the method of developing evidence-based typologies of female sex work described in Chapter 4 is applied to IBBA data collected among female sex workers from the south Indian states of Andhra Pradesh and Tamil Nadu.

The results of the analysis are presented in section 5.1, separately for each state (subsections 5.1.1 and 5.1.2), followed by a discussion of the results in the context of previous research (section 5.2) and of the limitations of the analysis (section 5.3).

### **5.1. Results**

The results of the analysis are discussed separately for each state. The analysis was conducted using the same three-stage approach as documented in the previous chapter for Karnataka and similar tables are prepared using data from each state.

#### **5.1.1. Typology of female sex work in Andhra Pradesh**

Table 5.1 presents the results of the univariate and bivariate analysis (Stage 1). The IBBA was conducted in eight districts of Andhra Pradesh: Karim Nagar (34%), East Godavari (16%), Guntur (13%), Hyderabad (11%), Visakhapatnam (9%), Chittoor (8%), Prakasham (6%) and Warangal (4%). Study participants have a mean age of 30 years, with 48% of them being less than 30 years old. Only 31% of female sex workers can read and write and 59% do other work in addition to sex work. Almost half of the women are married, 43% separated/ divorced/ widowed and 8% unmarried. However, 78% of all women report having a regular partner. Study participants started their sexual lives at an early age (mean

age 15.7 years), with 88% of them having their first sexual contact at or before the age of 18 years.

The mean age at entry into sex work is 23.6 years: 24% started sex work before the age of 20 years, 33% between 20 and 24 years, and 44% at or after 25 years. Hence, the women have been doing sex work for a mean average of 6.2 years; 26% for 2 years or less, 50% for 3 to 9 years and 25% for 10 years or more. While half of female sex workers solicit most of their clients in public places (the 'street'), 26% solicit in their own homes, 16% in brothels and 7% in other places. Following solicitation, the women entertain their clients in their own homes (37%), lodges (22%), brothels (16%), public places (14%), rented rooms (8%) or other places (3%). Female sex workers entertain an average of 35 clients per month; 54% have 30 or less clients, 22% 31 to 45 clients, and 24% 46 or more clients. About half of these clients are regular; 21% have up to 3 regular clients out of 10 clients, 39% 4 to 5 clients, 25% 6 to 7 clients, and 15% 8 or more clients. Unlike in Karnataka where a minority of FSWs migrated for the purpose of sex work, 74% of female sex workers in Andhra Pradesh have a history of migration.

29% of FSWs report inconsistent condom use with occasional clients, 37% with regular clients and 91% with regular partners. Moreover, 19% of the women report having had anal sex with their clients and 21% experiencing violence or forced sex in the past year. Over 60% of FSWs consume alcoholic beverages at least once per week. Three quarters of the women report having had STI symptoms in the previous year.

Over half of the women have medium knowledge about HIV/AIDS (answered 3-4 questions correctly out of 5), 28% have low knowledge (0-2 questions) and 20% high knowledge (5 questions). Most study participants had been exposed to programme activities; 64% had attended the clinic, 76% had been contacted by peer educators, and 22% had not been exposed to either of these two programme services.

Table 5.1. Univariate and bivariate analysis of risk factors by HIV and STI prevalence, Andhra Pradesh

Variable	Total		HIV		STI	
	N	%	%	p value	%	p value
<b>District</b>						
Chitoor	267	8.2	8.1	0.002	7.2	<0.001
East Godavari	522	16.0	26.3		6.6	
Guntur	414	12.7	21.3		7.7	
Hyderabad	364	11.1	14.3		16.5	
Karim Nagar	1100	33.6	21.1		4.4	
Prakasham	194	5.9	11.1		3.6	
Visakhapatnam	294	9.0	14.2		7.3	
Warangal	115	3.5	10.8		7.8	
<b>Age</b>						
18-24 years	703	21.5	20.3	0.328	10.0	0.014
25-29 years	861	26.3	19.0		6.5	
30-34 years	702	21.5	15.9		5.4	
35-39 years	674	20.6	21.9		4.7	
40+ years	332	10.1	12.6		10.8	
Mean	3271	29.8	-		-	
<b>Can read and write</b>						
No	2271	69.4	18.2	0.745	8.0	0.012
Yes	1000	30.6	19.5		4.9	
<b>Other work than sex work</b>						
No	1340	41.0	18.6	0.977	7.1	0.968
Yes	1930	59.0	18.5		7.1	
<b>Marital status</b>						
Unmarried	273	8.4	22.7	<0.001	8.8	0.014
Married	1601	49.1	10.3		5.1	
Ex-married	1387	42.5	27.4		8.4	
<b>Has a regular partner</b>						
No	722	22.1	25.9	0.004	9.0	0.063
Yes	2548	77.9	16.4		6.5	
<b>Age at first sex contact</b>						
<15 years	1071	32.8	18.0	0.906	7.1	0.143
15-16 years	1211	37.0	18.2		5.9	
17-18 years	594	18.2	19.9		7.3	
19+ years	394	12.0	18.6		10.3	
Mean	3270	15.7	-		-	
<b>Age at entry into sex work</b>						
<18 years	401	12.3	24.8	0.268	6.6	0.514
18-19 years	376	11.5	17.9		9.9	
20-24 years	1068	32.7	17.5		7.1	
25-29 years	882	27.0	19.9		6.3	
30+ years	544	16.6	14.3		6.7	
Mean	3270	23.6	-		-	
<b>Duration in sex work</b>						
0-2 years	851	26.0	15.5	0.506	9.5	0.120

Variable	Total N	%	HIV %	p value	STI %	p value
3-4 years	630	19.3	20.8		7.6	
5-9 years	986	30.2	18.6		6.1	
10+ years	803	24.6	19.9		5.3	
Mean	3270	6.16	-		-	
Main place of solicitation						
Home	849	26.0	21.3	0.471	6.8	0.164
Brothel	536	16.4	20.9		5.2	
Street	1645	50.4	17.1		7.3	
Other	232	7.1	14.3		11.3	
Main place of sex						
Home	1190	36.5	18.5	0.956	7.0	0.221
Rented room	276	8.4	16.8		3.8	
Lodge	732	22.4	18.8		8.0	
Brothel	526	16.1	20.9		5.2	
Street	439	13.5	17.4		10.2	
Other	101	3.1	17.3		7.7	
Monthly client volume						
1-15 clients	453	13.9	23.9	0.256	5.8	0.721
16-30 clients	1315	40.4	15.3		7.0	
31-45 clients	720	22.1	16.9		6.9	
46-60 clients	391	12.0	22.7		9.1	
61+ clients	380	11.7	22.4		7.2	
Mean	3258	34.5	-		-	
Number of regular clients out of 10						
0-3 clients	701	21.4	16.3	0.370	7.4	0.192
4-5 clients	1264	38.7	19.6		8.3	
6-7 clients	827	25.3	20.9		5.1	
8-10 clients	479	14.7	15.0		6.6	
Mean	3271	5.09	-		-	
Ever migrated for sex work						
No	850	26.0	15.0	0.033	9.3	0.010
Yes	2421	74.0	19.8		6.3	
Inconsistent condom use with occasional clients						
No	2171	71.1	20.4	0.033	6.5	0.029
Yes	881	28.9	14.7		9.5	
Inconsistent condom use with regular clients						
No	1978	63.5	21.4	0.005	6.6	0.581
Yes	1136	36.5	14.2		7.4	
Inconsistent condom use with regular partners						
No	228	9.0	26.8	0.028	8.9	0.313
Yes	2314	91.0	15.4		6.3	
Ever had anal sex						
No	2637	80.6	18.4	0.908	7.7	0.044

Variable	Total N	%	HIV %	p value	STI %	p value
Yes	634	19.4	19.1		4.5	
Alcohol consumption						
Less than 1 per week/ Never	1287	39.4	16.8	0.220	5.9	0.103
At least 1 per week	1979	60.6	19.7		7.9	
Beaten or forced to have sex in the past year						
No	2580	79.0	16.6	0.046	7.0	0.956
Yes	687	21.0	25.9		7.1	
Reported STI symptoms in the past year						
No	852	26.1	14.0	0.009	8.2	0.368
Yes	2419	74.0	20.1		6.7	
HIV knowledge						
Low (0-2 questions)	925	28.3	19.5	0.539	7.6	0.519
Medium (3-4 question)	1701	52.0	17.1		7.3	
High (5 questions)	645	19.7	21.1		5.7	
Mean	3271	3.14	-		-	
Ever attended the programme clinic						
No	1179	36.1	15.9	0.110	7.5	0.629
Yes	2092	64.0	20.1		6.9	
Ever contacted by peer						
No	788	24.1	15.6	0.163	7.0	0.969
Yes	2483	75.9	19.5		7.1	
Program exposure (2 above activities)						
Not exposed	702	21.5	15.6	0.155	7.1	0.853
1 activity	563	17.2	16.1		7.7	
2 activities	2006	61.3	20.3		6.9	
Total	3271	100.0	18.6	-	7.1	-

Following the univariate analysis of the socio-demographic, sex work, behavioural and programme-related variables, I conducted bivariate analyses of these variables by HIV and STI status. I first discuss the variables associated with HIV status.

HIV prevalence varies significantly by district, from 8% in Chitoor to 26% in East Godavari. Previously married FSWs are HIV positive in larger numbers (27%) compared to unmarried (23%) and married FSWs (10%). However, 26% of FSWs who do not have regular partners are HIV positive compared to 16% of their counterparts. Age, age at sexual debut, literacy status and doing other work in addition to sex work are not significantly associated with HIV status.

Similarly, there is no association between sex work-related characteristics and HIV prevalence, including age at entry into sex work, duration in sex work, main place of solicitation, main place of sex, monthly client volume and number of regular clients. However, 20% of FSWs who migrated for the purpose of sex work are HIV positive compared to 15% who do not have migration experience.

Female sex workers who use condoms consistently are HIV positive in larger numbers compared to their counterparts, with respect to occasional clients (20% vs. 15%), regular clients (21% vs. 14%) and regular partners (27% vs. 15%). HIV prevalence is higher among women who experienced violence or forced sex in the previous year (26% vs. 17%) and who reported having had STI symptoms in the same time span (20% vs. 14%). Anal sex experience, alcohol consumption, HIV/AIDS knowledge and exposure to programme activities are not associated with HIV status.

I also examined the associations between the above-mentioned variables and STI status. STI prevalence is highest in Hyderabad (17%) and lowest in Prakasham (4%). There is variation in STI prevalence across age groups, with the highest prevalence being recorded among the youngest and the oldest FSWs. 8% of illiterate FSWs are STI positive compared to 5% of those who can read and write. STI prevalence is lower among married FSWs (5%) and higher among separated/ divorced/ widowed (8%) and unmarried FSWs (9%). Having non-sex work-related sources of income, a regular partner and the age at sexual debut are not associated with STI status.

Similarly, there is no association between STI prevalence and age at entry into sex work, duration in sex work, main place of solicitation, main place of sex, client volume, or number of regular clients. FSWs that have not migrated for sex work have slightly higher STI prevalence compared to their counterparts (9% vs. 6%).

STI prevalence is slightly higher among female sex workers who have not been using condoms consistently with occasional clients (10% vs. 7%) and who did not have anal sex with clients (8% vs. 5%). However, inconsistent condom use with regular clients and regular partners, alcohol consumption, experience of violence and forced sex, and reported STI symptoms are not associated with STI status. The analysis also shows that HIV/AIDS knowledge and programme exposure are not associated with STI prevalence.

In Stage 2 of the analysis I conducted stepwise forward logistic regression model selections ( $p < 0.05$ ) with HIV (Table 5.2) and STI status (Table 5.3) as outcome variables. The following independent variables were included in each model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for the purpose of sex work, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional or regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure.

Table 5.2 presents the results of the initial model with HIV prevalence as an outcome variable. In addition to the place of solicitation and district which were ‘fixed’ variables, the only significant predictors of HIV status are the marital status ( $p < 0.001$ ) and reported STI symptoms ( $p = 0.017$ ). Between these two variables, marital status is the strongest predictor of HIV status, as it was the first variable to be selected in the stepwise model.

Table 5.3 shows the results of the initial model with STI prevalence as an outcome variable. After place of solicitation and district, the following variables were shown to be significant predictors of STI status (in the order in which they were added to the model): marital status ( $p = 0.002$ ), literacy ( $p = 0.009$ ), and duration in sex work ( $p = 0.013$ ).

Table 5.2. Results of stepwise forward logistic regression model with HIV prevalence as an outcome variable, Andhra Pradesh (final model); variables listed in the order they were added to the model, except for place of solicitation and district which were fixed

Variable	Subcategory	AOR	95% CI		p value
Place of solicitation	Street	1.00			
	Home	1.22	0.61	2.43	0.945
	Brothel	1.00	0.58	1.71	
	Other	0.95	0.56	1.63	
District	Chitoor	1.00			
	East Godavari	4.06	2.50	6.59	<0.001
	Guntur/Prakasham	2.81	1.65	4.80	
	Hyderabad	3.26	1.47	7.26	
	Karim Nagar/Warangal	3.73	1.60	8.69	
	Visakhapatnam	2.34	1.21	4.54	
Marital status	Married	1.00			
	Unmarried	2.33	1.36	3.99	<0.001
	Ex-married	3.16	2.28	4.39	
Reported STI symptoms	No	1.00			
	Yes	1.50	1.08	2.08	0.017

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional and regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure.

Table 5.3. Results of stepwise forward logistic regression model with STI prevalence as an outcome variable, Andhra Pradesh (initial model); variables listed in the order they were added to the model, except for place of solicitation and district which were fixed

Variable	Subcategory	AOR	95% CI		p value
Place of solicitation	Brothel	1.00			
	Home	1.36	0.67	2.78	0.344
	Street	1.08	0.57	2.02	
	Other	1.66	0.83	3.36	
District	Chitoor	1.00			
	East Godavari	0.92	0.47	1.79	<0.001
	Guntur/Prakasham	0.91	0.51	1.65	
	Hyderabad	2.40	1.26	4.56	
	Karim Nagar/Warangal	0.65	0.30	1.40	
	Visakhapatnam	1.26	0.62	2.57	
Marital status	Married	1.00			
	Unmarried	2.47	1.46	4.19	<0.001
	Ex-married	2.04	1.37	3.04	

Variable	Subcategory	AOR	95% CI		p value
Can read and write	No	1.00			
	Yes	0.60	0.42	0.87	0.007
Duration in sex work (years)		0.95	0.91	0.99	0.013

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional and regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure.

I also computed interaction terms between each of the variables listed in Tables 5.2 and 5.3 respectively and added them one at a time to the initial model selection process; the interaction terms significant at the  $p < 0.05$  level were then added together to the model selection process. In the case of the stepwise forward logistic regression with HIV prevalence as an outcome variable, none of the interaction terms computed were significant at  $p < 0.05$  level, indicating that the final model after taking into account possible interaction terms is the one presented in Table 5.2.

Table 5.4 presents the results of the stepwise forward logistic regression model selection process ( $p < 0.05$ ) with STI prevalence as outcome variable, after taking into account possible interaction terms (final model). One interaction term is significant at  $p < 0.05$  level: duration in sex work and district ( $p < 0.001$ ), indicating that the effect of the time spent in sex work on STI status varies depending on the district of residence.

Table 5.4. Results of stepwise forward logistic regression model with STI prevalence as an outcome variable, while controlling for significant interaction terms, Andhra Pradesh (final model)

Variable	Subcategory	AOR	95% CI		p value
Place of solicitation	Brothel	1.00			
	Home	1.25	0.61	2.55	0.519
	Street	0.97	0.51	1.85	
	Other	1.40	0.66	2.96	
District	Chittoor	1.00			
	East Godavari	0.48	0.17	1.35	0.001

Variable	Subcategory	AOR	95% CI		p value
Marital status	Guntur/Prakasham	0.87	0.34	2.20	
	Hyderabad	1.99	0.72	5.48	
	Karim Nagar/Warangal	1.02	0.37	2.82	
	Visakhapatnam	3.87	1.39	10.78	
	Married	1.00			
Can read and write	Unmarried	2.21	1.29	3.78	0.001
	Ex-married	2.04	1.37	3.05	
	No	1.00			
Duration in sex work (years)	Yes	0.56	0.39	0.82	0.003
		0.94	0.84	1.05	0.243
Duration in sex work*District	Chittoor	1.00			
	East Godavari	1.10	0.97	1.24	<0.001
	Guntur/Prakasham	1.01	0.88	1.15	
	Hyderabad	1.05	0.89	1.23	
	Karim Nagar/Warangal	0.90	0.78	1.05	
	Visakhapatnam	0.77	0.62	0.95	

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional and regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure, and duration in sex work\*district.

The results of the analyses conducted in Stage 2 indicate that marital status is the strongest predictor of HIV and STI prevalence among female sex workers in Andhra Pradesh. A typology distinguishing between female sex workers based on their main place of solicitation and marital status would consist of the following categories (resulting from the overlap of the two criteria): home unmarried (unmarried FSWs soliciting clients in their homes – 2%), home married (married FSWs soliciting in their homes – 12%), home ex-married (separated/ divorced/ widowed FSWs soliciting in their homes – 13%), brothel unmarried (unmarried FSWs soliciting in brothels – 4%), brothel married (married FSWs soliciting in brothels – 6%), brothel ex-married (previously married FSWs soliciting in brothels – 7%), street unmarried (unmarried FSWs soliciting in public places – 2%), street married (married FSWs soliciting in public places – 27%), street ex-married (previously

married FSWs soliciting in public places – 21%), and FSWs soliciting clients in other places (7%). Of note, some of these categories of FSWs are quite small e.g. home unmarried, street unmarried and hence data related to them should be interpreted with caution.

Table 5.5. Typology of female sex work ‘place of solicitation and marital status’ by HIV and STI prevalence, Andhra Pradesh

	N	%	HIV (%)	STI (%)
Home unmarried	60	1.8	14.3	4.6
Home married	376	11.6	9.4	5.0
Home ex-married	413	12.7	33.1	8.8
Brothel unmarried	123	3.8	26.0	9.1
Brothel married	196	6.0	11.8	4.1
Brothel ex-married	217	6.7	26.3	4.0
Street unmarried	73	2.2	21.9	9.0
Street married	880	27.1	11.2	5.4
Street ex-married	682	21.0	24.4	8.3
Other	232	7.2	14.3	11.3

Table 5.5 presents the HIV and STI prevalence for each category of the full typology described above. In Stage 3 of the analysis, this typology was recoded in order to range from high to low HIV and STI prevalence respectively. The resulting classifications were further categorised into three groups. The 36 possible combinations of the 10 categories of FSWs were compared by fitting one logistic regression model corresponding to each reduced typology and comparing the log likelihood values of the 36 models. This process was conducted for HIV and STI separately. The analysis indicates that according to the HIV prevalence of each category of FSWs, home ex-married FSWs are at high risk, brothel and street ex-married and unmarried FSWs are at medium risk, and the remaining categories of FSWs (home unmarried, other, married FSWs irrespective of the place of solicitation) are at low risk (log likelihood -1500.3). In terms of the recent risky behaviour, as indicated by the STI prevalence, FSWs soliciting clients in other places than their

homes, brothels and public places are at high risk, brothel unmarried, street unmarried and ex-married and home ex-married are at medium risk, and home unmarried, brothel ex-married and married FSWs soliciting clients in homes, brothels or public places are at low risk (log likelihood -803.4).

### **5.1.2. Typology of female sex work in Tamil Nadu**

As in the case of the other two states, I first conducted univariate and bivariate analysis of various possible risk factors of HIV and STI status (Table 5.6).

The IBBA was conducted in five districts: Chennai (38%), Madurai (23%), Coimbatore (17%), Salem (13%) and Dharmapuri (9%). Female sex workers from Tamil Nadu have a mean age of 32 years, with only 36% of them being less than 30 years old. The women are more literate than female sex workers from the other two states, as almost half of them can read and write. In addition to sex work, 59% of FSWs also do other work. The majority of FSWs are married (59%) or were married previously (37%); only 3% are unmarried. Nevertheless, over three quarters of the women have a regular partner. The age at sexual debut is higher in Tamil Nadu (mean age 18 years) compared to Karnataka and Andhra Pradesh (16 years); 64% had their first sexual contact at or before the age of 18 years.

Female sex workers from Tamil Nadu start sex work later than in the other two states (mean age at entry 27 years); 10% started before the age of 20 years, 54% between 20 and 29 years, and 36% after 30 years. Consequently, the mean duration of time in sex work is 5.1 years; 37% have been doing sex work for 2 years or less, 45% for 3 to 9 years, and 18% for 10 years or more. The large majority of female sex workers in Tamil Nadu solicit their clients in public places (86%), while the others solicit in their homes (8%) or in various other places (7%). Clients are entertained in FSWs' homes (51%), lodges (20%),

rented rooms (16%), public places (11%) and other locations (3%). Tamil Nadu female sex workers entertain a mean average of 26 clients per month, much fewer than in Andhra Pradesh (35 clients) or Karnataka (45 clients); 21% have up to 15 clients, 48% 16 to 30 clients, and 31% over 30 clients per month. More than half of the clients are regular customers (55%): 28% have up to 3 regular clients out of 10, 26% 4 to 5 regulars, 21% 6 to 7 regulars, and 25% 8 or more regular clients. Unlike in Andhra Pradesh (74%), only 29% of female sex workers ever migrated for the purpose of sex work.

Similar to the situation in the other two states, condom use varies depending on the type of sexual partner: 26% do not use condoms consistently with occasional clients, 30% with regular clients and 89% with regular partners. One tenth of study participants reported anal sex with clients and 11% were beaten or forced to have sex in the past year. 16% of FSWs report consuming alcoholic beverages at least once per week. 37% of the women report having experienced STI symptoms in the year previous to the survey.

Study participants were asked five questions which gauged their knowledge about HIV/AIDS; 23% answered up to 2 questions correctly, 39% 3 to 4 questions and 38% all 5 questions. While FSWs' knowledge about HIV transmission is above average, they were less exposed to Avahan programme activities than the women from the other two states: 42% had never attended the clinic nor met a peer educator, 56% had attended the clinic and 58% had been contacted by peer educators. However, while in Karnataka Avahan was basically the only service provider (except for the government-funded NGOs), this was not the case in Tamil Nadu where multiple NGOs operate (Ramakrishnan et al., 2010). In other words, many Tamil Nadu FSWs may have been exposed to non-Avahan programme activities.

Table 5.6. Univariate and bivariate analysis of risk factors by HIV and STI prevalence, Tamil Nadu

Variable	Total N	%	HIV %	p value	STI %	p value
<b>District</b>						
Chennai	780	38.4	3.5	0.009	3.0	0.428
Coimbatore	354	17.4	5.9		4.2	
Dharmapuri	174	8.5	11.6		4.1	
Madurai	460	22.6	4.9		2.1	
Salem	265	13.0	12.5		4.7	
<b>Age</b>						
18-24 years	276	13.6	7.5	0.638	5.2	0.132
25-29 years	447	22.0	6.8		4.9	
30-34 years	453	22.3	4.8		2.8	
35-39 years	524	25.8	5.2		1.9	
40-65 years	331	16.3	6.8		2.6	
Mean	2031	32.3	-		-	
<b>Can read and write</b>						
No	1049	51.6	6.1	0.975	3.4	0.938
Yes	983	48.4	6.1		3.3	
<b>Other work than sex work</b>						
No	836	41.4	6.4	0.709	3.9	0.305
Yes	1183	58.6	5.9		2.8	
<b>Marital status</b>						
Unmarried	65	3.2	3.4	<0.001	0.9	0.430
Married	1207	59.4	3.4		3.4	
Ex-married	760	37.4	10.5		3.5	
<b>Has a regular partner</b>						
No	473	23.3	9.2	0.007	3.7	0.678
Yes	1559	76.8	5.1		3.2	
<b>Age at first sex contact</b>						
<15 years	257	12.7	9.4	0.132	3.3	0.933
15-16 years	449	22.2	5.7		2.9	
17-18 years	596	29.4	7.0		3.3	
19+ years	725	35.8	4.5		3.7	
Mean	2024	17.8	-		-	
<b>Age at entry into sex work</b>						
<20 years	192	9.5	7.1	0.038	4.9	0.113
20-24 years	510	25.1	9.2		4.6	
25-29 years	592	29.2	3.2		3.4	
30-34 years	467	23.0	5.3		1.5	
35+ years	270	13.3	7.2		2.8	
Mean	2030	27.2	-		-	
<b>Duration in sex work</b>						
0-2 years	745	36.7	6.1	0.917	4.1	0.478
3-4 years	467	23.0	5.3		2.8	
5-9 years	454	22.3	6.8		3.7	
10+ years	365	18.0	5.7		2.1	

Variable	Total N	%	HIV %	p value	STI %	p value
Mean	2030	5.07	-		-	
Main place of solicitation						
Home	151	7.5	1.8	0.072	4.4	0.667
Street	1741	85.9	6.3		3.3	
Other	136	6.7	8.1		2.5	
Main place of sex						
Home	1027	50.6	5.4	0.320	2.9	0.459
Rented room	318	15.7	4.5		4.2	
Lodge	405	19.9	8.5		4.7	
Street	217	10.7	6.6		1.6	
Other	64	3.2	9.0		3.0	
Monthly client volume						
1-15 clients	414	20.6	6.6	0.064	3.9	0.203
16-30 clients	966	48.0	4.6		3.2	
31-45 clients	406	20.2	5.9		1.6	
46+ clients	225	11.2	10.9		5.2	
Mean	2011	26.3	-		-	
Number of regular clients out of 10						
0-3 clients	566	27.9	4.6	0.093	3.6	0.003
4-5 clients	522	25.7	7.7		6.0	
6-7 clients	434	21.4	8.5		2.4	
8-10 clients	510	25.1	4.1		1.1	
Mean	2030	5.46	-		-	
Ever migrated for sex work						
No	1449	71.3	5.6	0.285	3.6	0.420
Yes	583	28.7	7.3		2.8	
Inconsistent condom use with occasional clients						
No	1238	74.1	6.6	0.963	3.6	0.621
Yes	433	25.9	6.7		4.3	
Inconsistent condom use with regular clients						
No	1347	69.9	5.8	0.613	3.1	0.899
Yes	580	30.1	6.8		3.3	
Inconsistent condom use with regular partners						
No	180	11.5	11.8	0.010	4.7	0.337
Yes	1380	88.5	4.3		3.0	
Ever had anal sex						
No	1828	90.0	6.1	0.836	3.3	0.749
Yes	202	10.0	5.7		3.8	
Alcohol consumption						
Less than 1 per week/ Never	1698	83.6	5.8	0.282	2.9	0.062
At least 1 per week	333	16.4	7.5		5.4	
Beaten or forced to have sex in the last year						
No	1802	89.0	5.7	0.046	3.5	0.348
Yes	223	11.0	9.7		2.4	

Variable	Total N	%	HIV %	p value	STI %	p value
Reported STI symptoms in the last year						
No	1290	63.5	4.9	0.020	3.5	0.666
Yes	742	36.5	8.1		3.1	
HIV knowledge						
Low (0-2 questions)	474	23.3	5.3	0.774	5.0	0.073
Medium (3-4 questions)	786	38.7	6.0		2.2	
High (5 questions)	773	38.0	6.7		3.4	
Mean	2032	3.55	-		-	
Ever attended the programme clinic						
No	890	43.8	5.5	0.486	3.6	0.604
Yes	1142	56.2	6.5		3.1	
Ever contacted by peer						
No	863	42.3	5.7	0.637	3.7	0.525
Yes	1170	57.6	6.4		3.1	
Program exposure (2 above activities)						
Not exposed	845	41.6	5.8	0.429	3.8	0.263
1 activity	62.9	3.1	0.0		0.6	
2 activities	1125	55.3	6.6		3.2	
Total	2032	100.0	6.1	-	3.3	-

Following the univariate analysis, I examined possible associations between the above-mentioned variables and HIV status (Table 5.6). There is significant variation in HIV prevalence across districts, ranging from 4% in Chennai to 13% in Salem. HIV prevalence varies by marital status, with previously married FSWs having a prevalence of 11% compared to married and unmarried FSWs (3%). Moreover, 9% of women without a regular partner are HIV positive compared to 5% of their counterparts. Other socio-demographic characteristics (i.e. age, literacy, doing other work in addition to sex work, age at sexual debut) are not associated with HIV status.

HIV status varies depending on the age at entry into sex work, with the youngest and oldest FSWs having the highest HIV prevalence (less than 20 years – 7%, 20-24 years – 9%, 25-29 years – 3%, 30-34 years – 5%, 35 years or more – 7%). Other sex work-related characteristics (i.e. duration in sex work, main place of solicitation, main place of sex,

monthly client volume, number of regular clients, migration status) are not associated with HIV status at the  $p < 0.05$  level.

In terms of safe sex practice, 12% of FSWs who use condoms consistently with regular partners are HIV positive compared to women who do not use condoms consistently (4%). FSWs that experienced violence or forced sex in the last year have a higher HIV prevalence (10%) than those that did not (6%). HIV prevalence is also higher among women who reported STI symptoms in the last year (8% vs. 5%). However, HIV status is not associated with inconsistent condom use with occasional and regular clients, anal sex, alcohol consumption, HIV knowledge, or Avahan programme exposure.

I also examined possible associations between STI status and socio-demographic, sex work-related, behaviour and programmatic variables. With the exception of the number of regular clients ( $p = 0.003$ ), none of the other variables examined were associated with STI status at the bivariate level. This is partly because STI prevalence across the entire sample of female sex workers from Tamil Nadu is quite low (3.3%) and hence statistically significant differences would be difficult to identify.

In Stage 2 of the analysis, I conducted stepwise forward logistic regressions ( $p < 0.05$ ) with HIV and STI status as outcome variables. The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional and regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure.

Table 5.7 presents the results of the stepwise logistic regression with HIV status as an outcome variable and indicates that aside from place of solicitation and district which are ‘fixed’ variables, the strongest predictor of HIV status is FSWs’ marital status ( $p<0.001$ ). Table 5.8 presents the results of the stepwise forward logistic regression with STI status as an outcome variable. Aside from place of solicitation and district, the factors which are significant predictors of STI status are – in the order they were added to the model – the number of regular clients ( $p=0.003$ ) and alcohol consumption ( $p=0.015$ ).

Table 5.7. Results of stepwise forward logistic regression model with HIV prevalence as an outcome variable, Tamil Nadu (final model); variables listed in the order they were added to the model, except for place of solicitation and district which were fixed

Variable	Subcategory	AOR	95% CI		p value	
Place of solicitation	Home	1.00				
	Street	4.60	1.43	14.83	0.021	
	Other	6.43	1.68	24.59		
District	Chennai	1.00				
	Coimbatore	1.71	0.59	4.99	0.032	
	Dharmapuri	2.81	1.04	7.57		
	Madurai	1.29	0.45	3.70		
	Salem	3.69	1.31	10.40		
	Marital status	Unmarried	1.00			
Married		0.82	0.23	2.91		<0.001
Ex-married		2.67	0.79	8.97		

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional and regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure.

I checked whether there were any interactions between the variables listed in Tables 5.7 and 5.8 by computing all possible interaction terms and adding them one at a time to each initial model selection process. The analysis did not identify any significant interaction effects between any HIV or STI status predictors respectively and hence the final models are the ones listed in Tables 5.7 and 5.8.

Table 5.8. Results of stepwise forward logistic regression model with STI prevalence as an outcome variable, Tamil Nadu (final model); variables listed in the order they were added to the model, except for place of solicitation and district which were fixed

Variable	Subcategory	AOR	95% CI		p value
Place of solicitation	Street	1.00			
	Home	1.56	0.44	5.50	0.785
	Other	1.06	0.46	2.41	
District	Madurai	1.00			
	Chennai	1.05	0.36	3.07	
	Coimbatore	1.93	0.69	5.45	
	Dharmapuri	1.48	0.52	4.23	
	Salem	2.43	0.84	7.01	
Number of regular clients out of 10	0-3 clients	2.83	1.09	7.35	0.003
	4-5 clients	6.17	2.32	16.41	
	6-7 clients	2.07	0.77	5.56	
	8-10 clients	1.00			
Alcohol consumption	Less than 1 per week/ Never	1.00			0.015
	At least 1 per week	2.23	1.17	4.26	

AOR=adjusted odds ratios, CI=confidence interval

Note: The following independent variables were included in the model selection process: main place of solicitation (fixed variable), district (fixed variable), main place of sex, age, literacy, doing other work than sex work, marital status, migration for sex work purpose, HIV knowledge, alcohol consumption, age at sexual debut, duration in sex work, monthly client volume, number of regular clients, inconsistent condom use with occasional and regular clients, anal sex, having a regular partner, violence and forced sex, reported STI symptoms, and programme exposure.

The previous analysis indicated that marital status is the strongest predictor of HIV status. A typology distinguishing between female sex workers based on their main place of solicitation and marital status would consist of the following categories: home married (married FSWs soliciting clients in their homes – 4%), home ex-married (previously married FSWs soliciting in homes – 3%), street unmarried (unmarried FSWs soliciting in public places – 3%), street married (married FSWs soliciting in public places - 52%), street ex-married (previously married FSWs soliciting in public places - 32%), and others (7%) (Table 5.9). Unmarried FSWs soliciting clients in their homes represented only 0.4% of the sample and hence were included in the ‘other’ category along with FSWs soliciting clients in other places than homes and public places.

Table 5.9. Typology of female sex work ‘place of solicitation and marital status’ by HIV prevalence, Tamil Nadu

	N	%	HIV (%)
Home married	79	3.9	0.4
Home ex-married	64	3.2	3.7
Street unmarried	55	2.7	4.0
Street married	1046	51.6	3.4
Street ex-married	640	31.5	11.3
Other	144	7.1	7.7

An attempt was made to group the six categories of FSWs distinguished by place of solicitation and marital status into three or two groups. The variable was recoded in descending order of the HIV prevalence of each category. The resulting variable was then categorised into three or two groups. I compared the log likelihood values of the logistic regressions corresponding to each of the 15 possible reduced typologies. The analysis recommends the following reduced typology, as it has the highest log likelihood value (-442.0): street ex-married and other FSWs have high lifetime HIV risk, street unmarried or married and home ex-married FSWs are at medium risk, and home married FSWs are at low risk.

As mentioned above, the strongest predictors of STI status are the number of regular clients and alcohol consumption. While the number of regular clients is a significant risk factor of STI status (Table 5.7), the association between the two variables is not linear and hence ‘implausible’<sup>15</sup>. Therefore, when computing the typology of sex work which captures recent risk behaviour, I took into account the second STI status predictor i.e. alcohol consumption. The resulting typology is presented in Table 5.10 and distinguishes between home low alcohol (FSWs soliciting clients in their homes that are

<sup>15</sup> FSWs that have 4-5 regular clients out of 10 have the highest prevalence (adjusted odds ratios (AOR) = 6.2, 95% confidence interval (CI) 2.3-16.4, compared to 8-10 clients category) and FSWs that have fewer or more clients have a lower prevalence (0-3 clients AOR=2.8, 95% CI 1.1-7.4; 6-7 clients AOR=2.1, 95% CI 0.8-5.6, 8-10 clients AOR=1.0).

low alcohol consumers – 6%), street low alcohol (FSWs soliciting in public places that consume alcohol less than once per week – 71%), street high alcohol (FSWs soliciting in public places that consume alcohol at least once per week – 15%), and other FSWs (8%). FSWs soliciting clients in their homes that consume alcohol at least once per week represent only 1.4% of the sample (28 cases) and hence were included in the ‘other’ category along with FSWs that solicit clients in other places than homes or public places.

Table 5.10. Typology of female sex work ‘place of solicitation and alcohol consumption’ by STI prevalence, Tamil Nadu

	N	%	STI (%)
Home low alcohol	123	6.1	5.0
Street low alcohol	1445	71.2	2.8
Street high alcohol	297	14.6	5.6
Other	164	8.1	2.4

Similar to the process described above with respect to the HIV prevalence-related typology, an attempt was made to reduce the categories of the full typology of sex work distinguished by place of solicitation and alcohol consumption to three or two groups. The analysis suggests that in terms of recent risky behaviour, as indicated by the STI prevalence, street high alcohol and home low alcohol FSWs are at high risk, street low alcohol FSWs are at medium risk, and other FSWs are at low risk (log likelihood -293.2).

## 5.2. Discussion

Female sex workers from Karnataka, Andhra Pradesh and Tamil Nadu have different HIV and STI prevalence and risk factors. While in Karnataka FSWs have a significantly different risk level depending on their main place of sex, this is not the case in the other two states. The risk for HIV and STI infection of FSWs from Andhra Pradesh varies by their marital status. Similarly, FSWs from Tamil Nadu have a different HIV prevalence depending on their marital status; however the strongest risk factor of STI prevalence

among this population is alcohol consumption. This is illustrative of the difference in HIV risk and associated vulnerabilities across geographical areas.

In order to maximize the sex work typology's ability to indicate which female sex workers are at high risk, the current typology which distinguishes between FSWs based on their main place of solicitation could incorporate the strongest risk factor of HIV and STI status respectively. In the case of Andhra Pradesh, the typology would classify FSWs by the main place of solicitation and the marital status. Depending on their HIV prevalence, previously married home-based FSWs are at high risk and previously married and unmarried brothel and street-based FSWs are at medium risk. In terms of the recent risky behaviour, FSWs soliciting clients in other places than their homes, brothels and public places are at high risk, while unmarried FSWs soliciting clients in brothels or public places and previously married FSWs soliciting in homes or public places are at medium risk.

As mentioned in Chapter 3, the possible risk factors examined in the analysis vary in terms of their potential for outreach. In India, women's marital status can generally be inferred based on a number of visual indicators. For example, *Devadasi* women wear a special type of beads, and married women wear another type of beads (Hindu and Muslim women wear different beads, but among both religious groups, married women wear distinctive beads). Hence, one can usually assess an Indian woman's marital status based on her appearance. At the same time, it is known that some FSWs tend to convey false impressions about certain aspects of their lives, including marital status; just like they use different names in different locations, some FSWs prefer to give the impression they are married when they are not. Hence, in the case of some FSWs, beads and other such 'marital status' visual indicators may not be as reliable as they would be in the general female population. Therefore, in practice, a typology distinguishing between FSWs based on their main place of solicitation and marital status would have limited applicability for outreach.

Nevertheless, the analysis identifies high-risk groups of FSWs in Andhra Pradesh that could be useful information for programmers working in the state.

Researchers working in Andhra Pradesh have been using two main typologies. Between 2003 and 2004, a team of researchers lead by Rakhi Dandona conducted a survey among female sex workers in 13 districts of Andhra Pradesh. Based on these data, they distinguished FSWs based on the main place of solicitation (unspecified, but implied) between street-based, home-based and brothel-based (Dandona et al., 2005a; 2005b; 2006; Frontiers Prevention Project, 2006; Kumar et al., 2006). Another team of researchers, working primarily in East Godavari district, have distinguished between the following categories of female sex workers: brothel only, street only, lodge/hotel only, home only, highway only, agricultural only, and multiple types (Blankenship et al., 2007a; 2007b; Dhopeswarkar, 2007; Hanck, 2006; 2007; Project Parivartan, 2007; West & Irwin, 2007; West et al., 2007). It is not clear whether the women practising sex work in only one setting are distinguished based on the main place of solicitation or the main place of sex. The typology suggested based on the analysis conducted in the present chapter represents an extension of the typology used by the Dandona team, as in addition to classifying FSWs based on their place of solicitation it distinguishes FSWs based on their marital status; however the outreach utility of this typology is limited.

Female sex workers from Andhra Pradesh from different settings have been shown to have a significantly different socio-demographic profile, in terms of age, caste, education, marital status and number of children (Dandona et al., 2006). Home-based FSWs reported better access to condoms compared to street-based FSWs (Kumar et al., 2006). At the same time, compared to brothel-based FSWs, street-based FSWs reported the highest condom use, followed by home-based FSWs (Dandona et al., 2005a). However, in terms of HIV testing, brothel-based FSWs, followed by home-based FSWs reported having

undergone HIV testing in larger numbers compared to street-based FSWs (Dandona et al., 2005).

The univariate and multivariate analyses conducted in the present chapter indicate that in Andhra Pradesh female sex workers' main place of solicitation is not a statistically significant risk factor of HIV and STI infection. This finding was shared with an expert who has been working in Andhra Pradesh and Tamil Nadu since the beginning of the HIV programme in India and has extensive knowledge about the sex work industry in the two states. In his opinion, women practising sex work in different settings in Andhra Pradesh do not have different HIV and STI prevalence because there is substantial migration/ mobility within and outside the state, and within and between sex work settings (Sundararaman, personal communication). This is supported by the IBBA data which show extremely high migration among FSWs in Andhra Pradesh (74%) compared to Karnataka (18%). This finding has important programmatic implications, as it suggests that in the context of Andhra Pradesh the NACO typology is not particularly useful for targeting those at highest risk and the programme should be targeting all FSWs regardless of their places of work, as HIV risk is universally high. At the same time, if there is indeed substantial mobility between sex work settings, the programme could theoretically reach all FSWs even if it targets only the women working in the most accessible places; however not enough data are available to support this contention.

In the case of Tamil Nadu, the results of the analysis suggest a typology that indicates which FSWs are HIV-positive (classification by main place of solicitation and marital status) and another typology that indicates which FSWs have engaged in recent risky sexual behaviour (classification by main place of solicitation and alcohol consumption). Previously married street-based FSWs have high lifetime HIV risk and unmarried or married street-based and previously married home-based FSWs are at

medium risk. However, as discussed above for Andhra Pradesh, a typology distinguishing FSWs based on place of solicitation and marital status has limited utility for outreach activities. Similarly, while knowing that alcohol consumption represents a risk factor for STI infection is important for Tamil Nadu programmers, a typology classifying FSWs based on their places of solicitation and alcohol consumption may have limited outreach applicability, when thinking about whom and where to reach. Specifically targeting women who work at drinking venues or in places of solicitation associated with alcohol consumption is likely to reach FSWs at highest risk for STI infection; in addition, outreach workers and/or peer educators can reach out to FSWs obviously inebriated while soliciting clients in various locations. This information is also useful in that it emphasises the importance of incorporating alcohol interventions into HIV interventions as a means of reducing HIV risk.

Alcohol consumption is increasingly recognised as a risk factor for HIV and a key component of primary and secondary prevention interventions among most at risk populations (USAID, 2009; World Health Organization, 2005). Only 16% of FSWs in Tamil Nadu reported consuming alcoholic beverages at least once per week. At the same time, alcohol consumption is one of the variables that can be expected to be underreported, especially in this setting. Alcohol consumption is fairly stigmatized in India, especially among women. Therefore, one can expect FSWs participating in a face-to-face survey to underreport alcohol consumption. Nevertheless, while the high risk groups might be larger, the risky effect of alcohol consumption would probably only increase in case such underreporting occurred.

In Tamil Nadu, previous studies have documented the following main categories of female sex workers: street-based, brothel-based, ‘family girls’ or ‘housewives’ (also called apartment or house-based), and mobile FSWs (also called call girls) (Asthana &

Oostvogels, 1996; Kumar, 2003). In addition to these categories, Amin (2004) also mentioned highway-based FSWs. Other researchers have proposed more collapsed categorisations of female sex workers. Velu et al. (2003) distinguished between street-based, brothel-based and discreet FSWs, while Panchanadeswaran et al. (2008) mentioned only street-based and brothel-based FSWs. The analysis suggests typologies which expand the street-based and home-based groups of female sex workers proposed by previous studies; however these typologies have limited utility for outreach. Phone-based (also called mobile FSWs or call girls), brothel-based and highway-based FSWs were included in the 'other' category, as they represented less than 4% of the total number of FSWs sampled in the IBBA. It is possible that certain categories of female sex workers were underrepresented due to sampling issues or that they represent small (but possibly growing) groups numerically speaking. It has been argued that about the time Avahan started its intervention in Tamil Nadu (before the IBBA), a police harassment campaign targeted at brothels resulted in a movement of FSWs from brothels to other settings i.e. homes and public places, which explains why brothel-based FSWs who have been previously documented in the literature were not represented in the IBBA (Sundararaman, personal communication).

There are no available published data on the level of risk experienced by women practising sex work in different settings in Tamil Nadu. The analysis conducted here suggests that street-based FSWs have a higher HIV prevalence than home-based FSWs, but there is no significant variation between these categories of FSWs in terms of STI prevalence.

Marital status was shown to be a significant risk factor of HIV prevalence in some previous studies. Married FSWs were shown to have lower prevalence than unmarried and previously married FSWs, using IBBA data from 22 districts in South India (Ramesh et al.,

2008) and data among FSWs attending a sexually transmitted infection clinic in Pune, Maharashtra (Brahme, Mehta, Sahay, Joglekar, Ghate, Joshi, Gangakhedkar, Risbud, Bollinger, & Mehendale, 2006b). Similarly, Mishra et al. (2009) showed that married FSWs have a lower prevalence of active syphilis compared to their counterparts using the IBBA data from Karnataka. Alcohol consumption was shown to be an important vulnerability factor among female sex workers using qualitative data (Panchanadeswaran et al., 2008; Rodríguez et al., 2010).

For each of the three states I propose two typologies; one typology is expected to be helpful in describing the variation in HIV prevalence among FSWs and the second typology in assessing which FSWs have engaged in recent risky sexual behaviour and hence may be at risk of HIV infection in the future (the two typologies may coincide). The first typology may be useful for services focused on offering treatment and care to HIV positive FSWs, but also for prevention of HIV infection among their sexual partners. A recent study on the mortality of female sex workers in Karnataka using verbal autopsy data has shown that almost all the FSWs practised sex work within three months prior to their death caused by AIDS, presenting a high risk of HIV infection for their sexual partners (Becker et al., 2010). The second typology may be useful for preventing HIV infection among the female sex worker population.

The analysis also helped identify other significant risk factors of HIV and STI status. In the case of Andhra Pradesh, FSWs who reported STI symptoms in the 12 months previous to the survey had a higher HIV prevalence, similar to the results from another study (Sarkar et al., 2006). Other significant predictors of STI prevalence among FSWs from Andhra Pradesh are literacy status and duration in sex work. These risk factors were also identified in Karnataka (see Chapter 4) and in previous studies (Mishra et al., 2009). In the case of Tamil Nadu, no other significant predictors were identified (partly because of

the low HIV and STI prevalence), with the exception of the number of regular clients as a risk factor of STI status, however this association is not linear, making it difficult to interpret.

In both Karnataka and Andhra Pradesh female sex workers who reported consistent condom use were HIV positive in larger numbers compared to FSWs who did not use condoms consistently. This may be indicative of seropositive women knowing or suspecting that they are HIV positive and being responsible regarding the safety of their sexual partners. The higher STI prevalence among study participants who reported inconsistent condom use brings support to employing STI status as a proxy of recent risky sexual behaviour.

### **5.3. Limitations**

The limitations discussed in Chapter 4 also apply to the analyses conducted for Andhra Pradesh and Tamil Nadu data, in terms of the design and sampling of the IBBA surveys, the choice of multivariate methods employed in the analysis, the outcome variables, and the independent variables examined.

In addition, it should be taken into account that a few independent variables examined for Karnataka were not employed for Andhra Pradesh and Tamil Nadu analyses, namely the fee per sex contact, number of monthly unprotected sexual contacts, group sex experience, receiving the 'grey pack', visiting the drop-in-centre, seeing a condom demonstration, and sex workers' collective membership. This is due to the fact that the Andhra Pradesh and Tamil Nadu datasets were provided merged and included only the common questions across the four states.

## **Chapter 6. Mode of operation of female sex work settings, Karnataka**

The chapter discusses the mode of operation of women working in the various female sex work settings documented in Belgaum district, Karnataka, based on the qualitative data collected. The qualitative study consisted of 50 in-depth interviews with FSWs from thirteen sex work settings documented throughout Belgaum district, Karnataka. The data were collected in March-April 2009, following the initial analysis of the IBBA data among female sex workers from Karnataka. The sex work settings were identified based on discussions with programmers working in the Belgaum district. Study participants were selected with the help of peer educators and other BIRDS staff (the local NGO). The interviews were conducted by a female interviewer trained in anthropology, experienced in working on research projects and female sex work programmes. I designed the interview guide, which was semi-structured and supervised the data collection. The data were translated and transcribed by a female translator trained in anthropology and experienced in sex work research. Following finalization of the translation, I analysed the data using Atlas.ti 5.0; content analysis focused on the thematic areas explored in the interviews.

The chapter is organized in three sections. In section 6.1, for each category of sex work I describe the place and mode of solicitation of clients, the place where they are entertained, the network operators and the women's level of autonomy (section 6.1.1), as well as the mobility existent between sex work settings (section 6.1.2). In section 6.2 I discuss the main findings and in section 6.3 some of the limitations of the study.

## 6.1. Results

### 6.1.1. Description of female sex work settings

#### 6.1.1.1. Brothel to brothel female sex workers

The brothels in Belgaum district are houses where sex work takes place and which are located in a specific area of the city known for its activities:

*“Interviewer:* How do they come to know that there are these houses where you do *dhande* [sex work]?

*Respondent:* It’s known to all.” (Interview 38)

They are run by *gharwalis* (brothel madams), who are usually former sex workers.

Some women have their own homes and “do [sex work in the brothel] from morning till evening” (Interview 34) and others live in the brothels on a continuous basis. Clients come on their own to the red-light area and choose the women they would like to have sex with: “We don’t sit outside or anything, we sit in the house only. They come and ask the *gharwali*, she shows and then they go” (Interview 36).

The large majority of clients who come to brothels are entertained by sex workers in the brothels. However, in some cases, known clients who want more privacy are allowed by the brothel madam to take the women to lodges:

*“Respondent:* If we know them, then we go with them.

*Interviewer:* Where do you go?

*Respondent:* Here only, we go to the lodge.” (Interview 36)

The *gharwali* has a lot of control over the way the women from her brothel practise sex work. She decides the rates, the percentage she charges in exchange of their stay (usually 50%) and the number and type of clients the women entertain:

“If they give 100 it means 50 for her, 50 for me... If you sit in her house you pay half” (Interview 35).

“Whoever she sends we have to do, good people, bad people” (Interview 11).

While the *gharwali* has a lot of power over the women working in her brothel, it should not be assumed that all the *gharwalis* exploit and harass the sex workers. There is great variation in the way the *gharwalis* treat the women:

“We both need each other. She has been of some help to us, she has given us money, she has helped our parents. She is like a parent to us. But some [*gharwalis*] are like ‘You are only responsible for whatever happens’.” (Interview 34)

Nevertheless, some of the participants currently working in other sex work settings gave powerful accounts of their terrible experiences while working in brothels:

“There in her house we have to do whoever comes, whether he has HIV or not, whether he wears condom or not, we have to do... There if he has paid less money, she does not give much time and we have to sleep with him and send him... There you are like a servant, you have to do what she says. She is like a butcher, she used to beat me... She used to drag me on the stairs and beat me all the way... They don’t let us out of the house, they don’t even let us call [our family]... because if we go we will go away, they think.” (Interview 32, woman trafficked into a brothel in Mumbai)

“In *gharwali*’s house you are like a servant. She may take care of you like a mother, but she will look at profits, if a client goes it means Rs50 loss. ‘Why you refuse?’ When you do 4-5 clients you start feeling aches and pains, then she says ‘Why this face and all? Why do you do like this?’ There is no freedom there, she scolds if you send the client back, she says ‘How to lead life?’.” (Interview 35, bonded in a brothel in Pune)

However, other respondents (especially the ones currently working in Belgaum brothels) had few complaints about the *gharwali*:

“She is good. She takes good care. In case of quarrels she takes care.” (Interview 36)

“They were our people only. She used to look after me like a daughter.” (Interview 15)

In exchange of the money she charges from each sex worker, the *gharwali* provides the women with a place to live and practise sex work and that is generally visited by a substantial number of clients, but also with protection from people who typically harass FSWs such as *gundas* (street thugs)<sup>16</sup> and the police:

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<sup>16</sup> *Gundas* are men, usually unemployed, who live off the money they take from sex workers, shop owners and others, by threatening and harassing them. In Karnataka, *gundas* are usually not part of organized crime and work independently.

“She gets the girls out [of jail] because she will have paid for the girls, so she gets them out [of jail]. She has to earn from them. She has to pay more in fact because of lawyer and all, but that burden again falls on our head, we have to do and pay the money back. It’s like *gharwalis* want us to stay here only forever.” (Interview 34)

As mentioned in one of the previous quotes, trafficked sex workers are not allowed to leave the brothel for fear that they may escape. In general, if a loan has been taken against a certain woman, she needs to stay in the brothel until she pays off the money she owes the *gharwali*. Theoretically, if a sex worker does not owe the *gharwali* any money, she is free to leave the brothel at anytime. However, in practice, women often have considerable financial responsibilities, which make them take loans on a continuous basis:

“If there is money that we need to repay her then we can’t go, but if we don’t owe her any money then we can say ‘If not you, another *gharwali*.’ True, we feel like that, but they don’t let you go out. We have to have enough to pay her, isn’t it?” (Interview 34)

#### **6.1.1.2. Lodge to lodge female sex workers**

Lodges represent small hotels. This type of female sex workers solicit and have sex in lodges. The clients come to the lodge, as the location of the lodges where sex work takes place is usually known by men who go to sex workers on a regular basis: “In the lodge there are lots of clients... Clients think ‘Why go searching for them? They will be available in the lodge’ and they come directly” (Interview 10). Sometimes the lodge also has a small restaurant (the local word for small restaurants is ‘hotel’):

”I sit in the hotel [restaurant] only. There will be supplier boys and they send the clients... There are rooms at the back, they pay rent and we go there only, I don’t go anywhere else... There is hotel here [below] and on the top floor there are rooms [the lodge].” (Interview 18)

While some women stay in the lodge during the night, most of them come to the lodge on a daily basis, from morning until evening:

“*Interviewer*: Do you do in the day or night?

*Respondent*: In the day only.

*Interviewer*: You don’t come in the night?

*Respondent*: No, from 10.30 to 5.30.” (Interview 30)

Sometimes, there are more women than rooms available in a lodge and hence the rooms are allocated to them in rotation: “It depends on our turn and when our turn comes we have to go because the room may be occupied” (Interview 8). Once the sex worker takes the client into the room, she is supposed to be with him there for a maximum of 10 to 20 minutes. If the client wants to spend more time with the woman, he needs to pay the lodge and the sex worker more. The pressure of time is an important aspect in lodge-based sex work, as the client volume is usually quite high:

*“Interviewer: For how long they [the clients] are allowed to stay?”*

*Respondent: Ten minutes, not more than that.” (Interview 8)*

*“Interviewer: How long is the client allowed to stay generally?”*

*Respondent: 15-20 minutes.*

*Interviewer: If he wants to stay longer?”*

*Respondent: Then [he has to pay] more money.” (Interview 30)*

Lodge to lodge sex work is fairly organized and involves a number of network operators, namely the lodge owner, the manager and the room boys (supplier boys). The owner usually hires someone else to manage the lodge. Hence, the lodge owner is not very involved in the day-to-day activities of the lodge: “Room boys will be there, manager will be there to take rent, the owner will not be there, he will be somewhere else” (Interview 10). The lodge provides the women with clients, decides the price for sex and the percentage charged per client: “In the lodge the owner only finds the clients.” (Interview 10). The lodge also offers sex workers protection from the police, by letting them know when a police raid will be conducted, if they manage to find out in time: “They [the police] take ‘entry’ [bribe]... They inform the girls to go away” (Interview 10).

There is a high turnover of sex workers in lodges. Women who work in lodges usually have the freedom to change lodges and/or to move to another sex work setting. In practice however, it is usually the lodge manager who asks the sex worker to stop coming

to the lodge, in order to be able to bring in new sex workers: “When new younger girls come, we have to leave, isn’t it? They [the clients] will sleep with us once or twice, but why they will sleep with us always? They will say ‘these are not new’” (Interview 10).

In addition to female sex workers who operate in certain locations dedicated for sex work such as brothels and lodges, there are women who solicit clients in public places:

*“Interviewer:* How do clients come to know that this woman is into sex work?

*Respondent:* They come to know. We will be standing in a group and they call, they come to know. We have come here for the sake of stomach, so when they come and ask the rate, we go... If we start staring at them they come and directly ask. They walk about four times here and there and then ask. They come to know because we will be standing there only from morning to evening. And the next day [if] you come the women will be standing there only. So they come to know.” (Interview 6)

I distinguish between these women depending on their main place of sex, because, as shown in Chapter 4, these categories of female sex workers experience different levels of risk for HIV. I discuss the following categories of women encountered in the study district, namely street to brothel, street to lodge, street to street, street to rented rooms and street to home.

### **6.1.1.3. Street to brothel female sex workers**

In places where brothels can be found, in addition to the women living and/or working in the brothel on a permanent basis, there is usually also a category of female sex workers who solicit clients in public places, such as the bus stand, railway station, the market or various streets, and then take them to a brothel to have sex: “To the brothel only we take them. Only at times if there is any problem here [at the brothel] then we go to lodge” (Interview 33). Unlike women who work in the brothel on a regular basis, this type of sex workers simply rent the room from the brothel madam for a certain fee: “We say ‘this is our client,’ we give 20 Rupees and finish” (Interview 35). Their relationship is very straightforward and it does not obligate them in any way.

Sometimes, street to brothel female sex workers get clients with the help of agents, such as rickshaw drivers:

*Interviewer:* Auto drivers find you clients?

*Respondent:* Yes, yes, they also take us to the houses [brothels].

*Interviewer:* They ask money?

*Respondent:* Yes, some take Rs50 from them, some ask them and also us” (Interview 35).

#### **6.1.1.4. Street to lodge female sex workers**

In most places in Belgaum district and Karnataka in general, there are many women who solicit clients in public places and take them to lodges. The women prefer to take the clients to lodges they are familiar with, as a way to protect themselves from possible problems from clients and other people:

*Respondent:* They say ‘that lodge is not good, we will go to this lodge’, but we go to the lodge we know well.

*Interviewer:* Why?

*Respondent:* Because if we go to a lodge where we don’t know anything or anyone, what to do if they do something? There are all kinds of people, there will be those who beat, those who beat and take away the mobile or gold on our body, like that.” (Interview 6)

Some of the women complain of the conditions in the lodges:

*Respondent:* I know only the lodge in the market. What, these lodges.

*Interviewer:* Why, what’s wrong?

*Respondent:* They are not good, they have not kept them clean, they are very dirty. Some rooms have beds and some don’t.

*Interviewer:* There are separate rooms?

*Respondent:* Yes.

*Interviewer:* How long do they give the room?

*Respondent:* For five or ten minutes.

*Interviewer:* That’s all?

*Respondent:* Yes, go in and come out.” (Interview 7)

Given the high costs of renting the room in the lodge, the women usually prefer to solicit clients independently, without the help of agents: “He gives us 100 Rupees and if we give 20 or 50 Rupees to the agent, what will remain with us? So we don’t have any agents” (Interview 3). Women usually try to keep a cordial relationship with the lodge owners/managers, as there is a limited number of lodges available for sex work in each locality and

hence they need to have their goodwill: “We have to listen to him so that next time he will let us in, so we have to manage him carefully” (Interview 3). One of the participants mentioned that occasionally the lodge owner provided her with clients. In this case, the financial agreement was the same as in the case of the lodge to lodge FSWs:

“In the lodge if any client were to be there they - the lodge owners - used to tell while we were leaving. They would say ‘Stay, there is one client and we would both take half and half.’ Means if it’s 200 then I would get 100 and they would keep 100.” (Interview 20)

#### **6.1.1.5. Street to street female sex workers**

While some female sex workers who solicit clients in public places take them to brothels or lodges, others take most of their clients to have sex in public places, such as spaces behind buildings, fields or any other public place where they can have privacy:

*Interviewer:* Where do you take the clients?

*Respondent:* Here only. Streets only... There on the road side.” (Interview 20)

Participants say that they choose these places on one hand because in lodges they are afraid of police raids and on the other hand because the clients cannot afford room rent:

*Interviewer:* Where you used to do?

*Respondent:* I used to go outside.

*Interviewer:* Why you did not go to lodge?

*Respondent:* I am afraid of the police. And one or the other lodge will be shut. Clients used to tell [to go to open places instead of lodges]. If they [lodge managers] don’t give [rooms in the] lodge, they [the clients] take us there [to open areas]. I used to say ‘I won’t come outside,’ but they used to say ‘Why spend on lodge and take us there?’.” (Interview 17)

Other women say that they have sex in open places because they have no alternatives:

“We don’t get lodge and all [there are no lodges available in the area], so I go in the fields. If I go to Sankeshwar, then I go in the area behind the municipality office. If we do in the house, it’s a rented house and they [the owners of the house] pester to vacate.” (Interview 31)

With the exception of the occasional help from rickshaw drivers, the women do not deal with any other network operators. In this respect, they are one of the most autonomous groups of sex workers:

*“Interviewer: Anyone like auto drivers find you clients?”*

*Respondent: No, I don’t have anyone like that.” (Interview 7)*

#### **6.1.1.6. Street to rented room female sex workers**

Some female sex workers who solicit clients in public places prefer to take their clients to rooms rented in someone’s house: “They say ‘Come to my house’ and we say ‘We can’t come to yours. I have come now only and I know this auntie’s house, let’s go there’” (Interview 12). These houses are located in ‘regular’ neighbourhoods and people usually do not know that sex work is being done there. The houses are owned or rented by women, usually former sex workers. Many women who use rented rooms prefer them to lodges:

*“Interviewer: You said you go more to rooms these days. Earlier you said you went to the lodge and you said it was good and all and then why did you change to room?”*

*Respondent: Now, some men will be good, there will be no fear of police, it will be like family house, police don’t know much about it and there is no hesitation of going there.” (Interview 10)*

The understanding between the sex workers and the owners of the house is very straightforward; the women pay a fixed amount on a client by client basis: “It is a small house. She is also living there on rent and she takes 50 Rupees for the room... From us only she survives“ (Interview 11). The sex workers sometimes get the help of rickshaw drivers in finding clients: “They [rickshaw drivers] know that we are good, so they send clients” (Interview 12).

### **6.1.1.7. Street to home female sex workers**

When their family situation permits it, some female sex workers who solicit clients in public places take them to their own homes: “We will be standing near the bus stand. They come and ask. We take them to the house” (Interview 28).

The women who practise sex work in this manner feel very comfortable about their clients coming to their homes, partly because of safety but also because of money:

“If it’s here only then we feel safe, because what they may do [something] somewhere else, who knows? Now they may have come alone and taken me and I go alone thinking he is alone, then if there are 4-5 people then what to do?” (Interview 25)

“They tell ‘come to lodge and all’, but I don’t go... Why go there? I will have to spend on lodge only” (Interview 24)

With the exception of the occasional help from rickshaw drivers, these women solicit clients independently and do not deal with any other network operator.

### **6.1.1.8. Home to home female sex workers**

This category of female sex workers solicits and entertain their clients in their own homes:

*Interviewer:* Where do you go?

*Respondent:* I don’t go anywhere. If they only come I do, otherwise I don’t. I am at home only.” (Interview 15)

One of the study participants explains that in the village people know the women who are *Devadasis* and practise sex work and come on their own to their houses:

*Respondent:* They knew I was available, that they can freely come any time to me.

*Interviewer:* How will they come to know that they can pay and come to you?

*Respondent:* Because when they tie beads [the initiation into the *Devadasi* tradition includes a ritual of tying beads], then people keep saying they have left her for prostitution, like that it will spread around and if they pay money they can come. Like that they come to know, so they come.” (Interview 19)

Many of the clients of home-based FSWs become regular clients, and many women use phones to keep in touch with them: “I don’t go anywhere... Both old and new [clients] come, and their friends” (Interview 14). Home to home sex workers usually feel

comfortable having sex in their homes and avoid going to other places such as lodges, even if the clients request it:

“If someone makes a phone call I tell them to come here and I tell them [it costs] this much and all and if they want they will come, otherwise no [I don’t go to another place].” (Interview 15)

Their homes are either owned or rented, are usually located in ‘regular’ neighbourhoods and most people are not aware that the women practise sex work there:

“I play this game secretly... No one comes to know.” (Interview 24)

“I change into night dress and sit at home. People say ‘How do you do [that] no one comes to know? I don’t tell about [what I do to] this person or that person, I don’t talk like that at all... Going to lodges is a problem but doing at house is safe... No police problem or anything here.” (Interview 26)

The clients also act as intermediaries, as they put the women in touch with other men who then become their clients. This is done informally, without any financial agreement. Sometimes, rickshaw drivers know the location of some of the homes where women practise sex work, bring potential clients there and charge the sex workers and the clients a fee. With the exception of the clients and sometimes rickshaw drivers, the women practise sex work in their own homes without the help of other network operators.

#### **6.1.1.9. Phone-based female sex workers**

It appears that phone-based sex work is operated through a network of sex workers, in the sense that former/ more established sex workers get clients for newer women, a service for which they charge part of the money paid by the client. Once the woman develops her own clientele, she gets new clients through her regular clients: “I started giving my number to the customers and they started calling me and then I used to go. I get clients only on the phone, I don’t go anywhere” (Interview 2).

One of the phone-based participants explains how she gets in touch with the clients and arranges the meeting:

“Clients call me and I tell them the meeting place. They ask me to come to the place where they say, but I won’t go there. Some say they want to come to my house, but since I do sex work very secretly, I tell them not to come to my house. Instead of that, I ask them to meet me at Hotel Green Garden, where we will have tea or breakfast or lunch and fix the programme for the day when we will have sex, how much money they have to pay, where they have to pay, all of that will be fixed. Then on the day of programme the client will come and pick me up and we go to the place of sex. If some client is not willing to come to Hotel Green Garden, he will meet me in the place where I ask him to come. Sometimes it will be in his car itself and after we fix the programme, I ask him to deposit money in my account and then after he deposits money in my account I go with him.” (Interview 1)

Many clients ask the women to go out of town with them, where they sometimes get in touch with other potential clients. However, this depends on the woman’s willingness to travel out of town, which is in many cases a function of her family situation:

“I go to Goa and all, I go for one night, but I end up spending three-four nights there because I get introduced from one person to another. I hardly get any time, day or night. Their friends, we meet and then they say we will go and they ask directly or through friends, sitting in the bar, on the beach and all. No one asks; in the rooms there even if four people do sex no one asks. We go there... Goa clients will take me to Goa, Pune clients to Pune and so on. All the time it is the client who decides the place of sex.” (Interview 1)

Sometimes the woman who acts as intermediary for the transaction also provides a place for sex in her house. Otherwise, the sex usually takes place in a lodge or someone else’s house, based on the client’s preference: “In the house they take rent, but there is safety, no one will see. If it’s a lodge then people can see” (Interview 4).

As mentioned above, most of the times the women start by getting clients with the help of other sex workers and after a while they practise sex work independently and deal with clients directly:

“When I started sex work in the beginning, one of my friends in the factory acted as a broker for me and also the factory owner used to give me phone numbers of his friends. Like this I established my network of clients and then I started getting the clients directly. In the beginning they use to pay me Rs1500 to Rs2000 and now I take only two three clients and it will be Rs5000 per client.” (Interview 1)

Because the intermediaries are sex workers themselves and there is no contract between the two parties, the transition between working through someone and working independently is usually not problematic, unlike in the case of other sex work settings operated by mediators:

*“Interviewer: Have you stopped going to aunty now?”*

*Respondent: Yes.*

*Interviewer: She didn’t create any problems for you?”*

*Respondent: No, if she asks, I tell her I have gone out or something.” (Interview 2)*

#### **6.1.1.10. Parlour girls**

Another category of female sex workers consists of women who work in beauty/ massage parlours and practise sex work. Based on their own accounts, men are interested in beauty parlour girls because “they are beautiful and they maintain their personality. We keep ourselves well groomed” (Interview 46).

While much of the mediation between women and clients is done through the phone, beauty parlour girls use their work as a means to solicit clients. One of the participants explains that the men get their phone numbers when they go to work as a beautician at someone’s house e.g. at a wedding:

*“Respondent: Men also need this, officers and all, they get facials and we go there, also at weddings.*

*Interviewer: When you go for the weddings they ask you?”*

*Respondent: Yes, they ask. If we are doing facial for them, then they ask our number and later they call. They don’t directly take us.*

*Interviewer: They keep in touch with you, so that’s how it happens. We are trying to understand how you get clients.*

*Respondent: They call us, we meet for two hours, they ask ‘When will you be free?’ We say ‘In the evening’ and they take us to lodge.*

*Interviewer: People know that women are available in the brothels, lodges and bus stands, but in beauty parlours, how do men come to know that this thing happens?”*

*Respondent: No, people don’t come to know, only our customers. We go to do facials to doctors or their wives or at weddings, then they tell it can’t be done at home, so they take us to some other place, outside Belgaum or any place where they have a house or something; not here, because it affects the customers.*

*Interviewer: They contact only through phone, not directly?”*

*Respondent:* Yes... No one comes near the parlour. It becomes a problem for the parlour customers.” (Interview 46)

Another participant solicits many of her clients through other people, women who come to her parlour:

*“Interviewer:* How do you contact the clients?

*Respondent:* On my mobile or through the mobiles of certain women who come to my parlour. They contact and come to our parlour and then tell us.” (Interview 45)

Some of this mediation is done free of charge, while some of the women who provide clients charge commission: “If she is a woman and she is telling us then we give Rs500 commission” (Interview 46).

Once the woman and the client get in touch with each other through the phone, they decide on a place and time convenient to meet, usually a public place, such as a restaurant: “We meet at a cold drink place like husband and wife and then if we have time we then we go inside, otherwise they go and we also come back” (Interview 45). If they agree on the money, they go to a hotel or house either within or outside the city and have sex there: “They tell it can’t be done at home, so they take us to some other place outside Belgaum or any place where they have a house or something; not here, because it affects the customers” (Interview 46). Of note, while much of the client solicitation is done through the parlour, the sex always takes place outside the parlour: “However big the parlour may be, that [sex in the parlour] does not happen, because 12 hours of the day women will be there” (Interview 46). The place of sex is usually chosen by the client based on his convenience.

Unlike the case of other types of female sex workers, the women working in beauty parlours who practise sex work have very little knowledge of each other’s activities. Most of the time, they are extremely concerned with maintaining their anonymity and practise sex work without anyone knowing: “People don’t know, only those whose houses we visit for facial and all, they know. That’s all, no one else comes to know” (Interview 46).

### 6.1.1.11. *Dhaba* to *dhaba* female sex workers

*Dhabas* are restaurants located on highways, where truck drivers and other motorists stop for food and tea. There are two main types of *dhabas*: “tea *dhabas* and those serving food; those serving tea, there *dhande* [sex work] happens” (Interview 8). However, some participants also reported practising sex work in some food *dhabas*.

The women who practise sex work in *dhabas* reside in houses in nearby villages or towns. In some *dhabas*, several women are working at the same time: “Earlier there were three women for this, so [there was] lots of competition” (Interview 44). In other *dhabas*, the women go to *dhabas* on certain days, as indicated by the *dhaba* owners, depending on client demand:

*Interviewer*: How many of you are there?

*Respondent*: I go alone. They give different days to different women. I go on those days.

*Interviewer*: Why they don't call two women together?

*Respondent*: They get their business, but if there are not many clients then we will not be getting anything, we have to simply spend on bus and go and then we won't make any money also.” (Interview 47)

Because most of the clients of *dhaba*-based FSWs are truck drivers who work on specific routes, there is usually an expectation of turnover of the women working in each *dhaba*: “They [the clients] feel bored. They ask for someone new and when they [*dhaba* owners] say ‘no one else is there,’ they go away” (Interview 27). Consequently, many women tend to work in several *dhabas* at the same time: “I go to other *dhabas* also, whichever is good” (Interview 27). They usually go to *dhabas* “in the afternoon, [and] in the night” (Interview 27), which is the period of time when men are more likely to stop and request the services of sex workers.

The women practising sex work in and around *dhabas* do not solicit clients openly, in front of the *dhaba*. Potential clients talk to the *dhaba* owner or the watchman, who puts

them in touch with the women. Some *dhabas* have rooms available and hence the women stay there while waiting for clients:

“*Interviewer*: Where you will be sitting?

*Respondent*: There is a room, the owner sends the clients [there].” (Interview 43)

If no rooms are available, the women stay in the fields behind the *dhabas*: “We sit in the fields behind, they don’t let us sit in the front. When the client asks, the watchman brings the client to us” (Interview 27).

As mentioned above, the *dhaba* owner requests the women to come to the *dhaba* depending on client demand. As in other sex work settings, this mediation is often done using phones:

“*Interviewer*: How do they contact you?

*Respondent*: They call and tell, they also tell the *dhaba* owner ‘I want her, ask her to be there, I will come at this time.’

*Interviewer*: They ask your name and all?

*Respondent*: Yes, they will be regular clients, they come to us only. Oil trucks and all, they are regulars. They call and tell and say ‘We will come at this time’.” (Interview 44)

Depending on whether rooms are available or not in the *dhaba*, the clients are entertained in rooms or in the fields. Even when rooms are available, sex is sometimes done in the nearby fields: “Here during the day we do here in the room and in the night we go in the fields and there are trees and a clearing, we go there. If someone comes we come to know, the watchman tells us” (Interview 27).

Usually, sex is more expensive in the *dhabas* where a room is provided:

“There is room there, no one will see. Here it’s open. We get money here, not like that there. But room rent they have to pay, isn’t it? Rs100 and Rs100 if they pay they can’t afford. Even if they pay us less, they still have to pay the room rent.” (Interview 44)

The *dhaba* owner allows the women to practise sex work in the *dhaba*, facilitates the transaction between them and the clients and provides a place for sex. He usually charges about a third of what the woman gets from the client, about Rs50:

“*Interviewer*: How much you give the owner?

*Respondent:* 50 [Rupees], and we keep 100.” (Interview 43)

When the sex takes place in the fields nearby the *dhaba*, the watchman looks out for the women and charges Rs10 to Rs20 per client: “We give to the watchman 20 Rupees. He stands guard for us until we finish, at a distance, then brings us back. What if someone does something?” (Interview 27).

As any other place where sex work takes place, *dhabas* are sometimes raided by the police, but the women usually feel that it is relatively safer for them to practise sex work there than in other places such as lodges: “I like outside better, because if someone catches us in the lodge then who will bring us out on bail?... I have seen lodge, *gharwali* and this [*dhaba*]. This only is better, working for ourselves, we don’t need anyone” (Interview 27). Sometimes the *dhaba* owner “if police are to come and all he informs us and tells us not to come, he helps a lot” (Interview 43). Even if the *dhaba* owner does not find out in time that the *dhaba* will be raided, he or the watchman usually has enough time to let the women know that the police have arrived so that the women can flee into the nearby fields: “There is a field at the back and grass is piled, we hide there, there are trees all around... The moment the vehicle comes, he warns us to go ‘Carry all your stuff and go’ he says” (Interview 43). In the case where the women are arrested, “they pay money and get us out” (Interview 44). The *dhaba* owner and/or the watchman also offer the women protection from *gundas* and difficult clients.

*Dhabas* are somewhat organized sex work settings and the *dhaba* owner has an important role. However, as shown above, because of the high turnover among women practising sex work in *dhabas*, sex workers are fairly autonomous and have the freedom to change the place of sex work according to their convenience.

### 6.1.1.12. Highway to highway female sex workers

This category of FSWs solicit clients by standing on the side of the highway and signalling vehicles. Sometimes they entertain the clients right away, while other times they get in the vehicle and travel for a while, after which they get down and pick up another vehicle. They have certain routes that they use according to their convenience:

*“Interviewer: Where do you stand?”*

*Respondent: Here we stand, on Sankeshwar bypass. We go to Kagal, then go in the vehicle only, we go up to Konnur near Belgaum. We don’t go directly to Konnur in the truck. We stop in Kagal and do [sex work], then take another truck and again we go like this.*

*Interviewer: You don’t stand in one place?”*

*Respondent: No, after the client is done, we catch a different truck.” (Interview 29)*

The timing of work varies depending on the sex worker. Some women go during the night, while others only feel comfortable during the day:

*“Interviewer: You go at night on the truck?”*

*Respondent: No, during the day time only. I feel scared.*

*Interviewer: Why?”*

*Respondent: What if they do something?” (Interview 29)*

As in the case of other types of female sex workers, regular clients contact the women using phones: “When the truck is nearby they say where they are and will ask ‘Will you come?’ Then they take us and go” (Interview 29). After the women pick up the clients on the highway, “some do in the vehicle only and some get down in the fields and do” (Interview 29). In some cases, this is decided by the client, based on various considerations:

*“Interviewer: When you get into the truck, who says where to do, you or the driver?”*

*Respondent: No, drivers only tell. Some drivers say ‘The truck is like God, it feeds us, we will not do in this.’ Kerala, Tamil Nadu drivers drop a curtain in the middle and do in the truck.*

*Interviewer: Who take you outside?”*

*Respondent: Belgaum, Dharwad drivers from here take us to the fields. These Kerala, Tamil Nadu drivers don’t have any God or anything, they do in the vehicle.” (Interview 29)*

In other cases, the women insist on having sex either in the vehicle or in the fields, depending on their preference.

Similar to the situation of street to street FSWs, highway-based FSWs work without using network operators: “We have to find our own clients” (Interview 29). However, the women practising sex work on highways tend to support each other in various ways. They travel together and try to look out for each other:

“My friend will be there, if I go alone I will feel scared. I wait until she finishes and she also waits for me.” (Interview 48)

“Two or three of us go together. We go up to that point together and then they go to their place, we go to ours... We feel scared because *gundas* may come, they may harm us. It’s a problem for us so we do quickly and come.” (Interview 50)

This practice does not entail any financial agreement between the women. One of the highway-based participants mentioned that she started practising sex work on highways by taking the help of another sex worker who negotiated with the clients and with whom she shared her earnings (Interview 49). However, it seems that such situations are fairly uncommon and most highway-based FSWs solicit clients directly, without the help of any agent or other network operator.

#### **6.1.1.13. Agricultural/ construction workers**

This category of female sex workers refers to women who have other sources of income and primarily solicit clients at their places of work, which are in non-sex work related industries, such as agriculture and construction. The interviews were with women who did agricultural work in the rural areas of Belgaum district. One of the participants did both agricultural and construction work (Interview 41).

The women undertake agricultural work on a daily basis. However, they do not solicit or entertain clients during that time, but after finishing their work: “While coming from work I do or while going. I don’t go to do that only. Go back and work” (Interview 23). The women do not solicit clients per se; they simply agree to requests made by men:

*“Interviewer: Do you get clients in the fields only?”*

*Respondent: Yes.*

*Interviewer: Not in the market or anything?”*

*Respondent: No, when we go to work then only they ask, if we want we will do, otherwise we don't. I don't have any mobile or anything, so only when we meet.*

*Interviewer: You do in the fields and come back?”*

*Respondent: Yes, when we meet each other then only that work, otherwise no.*

*Interviewer: You will be in need of money, do you go and meet anyone or you go only if they ask?”*

*Respondent: No, I don't go and ask anyone. Only if they ask me I go.” (Interview 23)*

However, some of the women working in the fields use phones to get in touch with their clients:

*“Interviewer: Where do you find clients?”*

*Respondent: When we go to work, when we meet somewhere, they take the phone number and then they call. How can they ask at workplace? When we go to work or through someone we know, we come to know...*

*Interviewer: It happens through phone?”*

*Respondent: Yes.*

*Interviewer: And if you don't have a phone?”*

*Respondent: Then they give their number and we call them.” (Interview 41)*

After the woman gets in touch with the client, they decide on the place and time of the meeting. The sex usually takes place in the agricultural fields and the exact location is decided either by the woman or the man:

*“Interviewer: Where do you take the clients?”*

*Respondent: Here only, near the agricultural fields. Here in the village, where can we go?”*

*Interviewer: The place and all, who tells?”*

*Respondent: Place and all they tell. ‘Come here, come there, come to this place.’ What do we know? They only tell.” (Interview 22)*

*“Interviewer: They suggest the place here?”*

*Respondent: We tell them, but if they know of any they also tell.” (Interview 41)*

Agricultural labourers who practise sex work represent the link between the prospective clients and other women who work in the fields. If a man is interested in a particular woman doing agricultural work, he expresses his interest through a sex worker who also works in the fields. The sex worker communicates the message to the new woman who can choose to accept or decline the offer. This mediation is done very informally and

the sex worker does not charge money for this. Within a village, the agricultural workers who practise sex work seem to know of each other's activities and to support each other:

*“Interviewer:* The other women with you, they help you?

*Respondent:* Yes, they stay and wait for us. We go together after we are finished.

*Interviewer:* They are helping in case you need help, they come and see if you are late?

*Respondent:* Yes, they wait.

*Interviewer:* They take money from you?

*Respondent:* No, it's just a help, we help each other, that's all. We are friends.” (Interview 42)

Once women working in agricultural fields start practising sex work, other men in the village find out about them from the initial clients and approach the women:

“The men talk, they find out. They ask and we say ‘If you give this much, we will come’.” (Interview 22)

*“Interviewer:* How did you find clients later?

*Respondent:* He must have told his friends. They asked me. I found him first and then he told others.” (Interview 41)

Again, this mediation is done informally and no money is charged by the previous clients.

Enquiries were made regarding the role played by the owners of the fields where women do agricultural work and the contractors in the case of construction work, in terms of possible coercion and/or harassment exercised by them in exchange of sexual favours. In the case of agricultural labourers, the participants denied any such situations, suggesting that women practise sex work through their own choice, without any external pressures from their employers:

*“Interviewer:* A woman is there [in the fields], she is just working for the sake of it, she doesn't require money, then she can say no [to land owner or other men]?

*Respondent:* Yes, she can.

*Interviewer:* No one will push her?

*Respondent:* No, if she wants she can do, if she doesn't she need not do” (Interview 42)

While this might be the case for agricultural labourers, the situation might be different for construction workers, as suggested by anecdotal evidence that they tend to harass the female labourers in exchange of sexual favours: “I have done with the

construction workers. Otherwise they wouldn't take me for work nor give me my wages" (Interview 31). However, not enough data are available about construction workers in order to clarify this issue.

### **6.1.2. Mobility of female sex workers between sex work settings**

In the previous section I discussed some of the differences between sex work settings, in terms of the main place of solicitation, the main place of sex and the network operators. However, some female sex workers solicit and entertain clients in a variety of places and/or move from one sex work setting to another throughout their lives. Table 6.1 presents a summary of participants' trajectories, in terms of the settings where they have worked until the time of the interview. One participant reported working previously in three other settings, four mentioned two other settings, eighteen reported one other setting, and the remaining twenty-seven participants had only worked in the current setting. Hence, more than half of the interviewees reported no history of mobility between different sex work settings and over one third reported only one movement. While the findings of the qualitative data cannot be interpreted quantitatively, this seems to suggest that while there is mobility between various sex work settings, it is not universal.

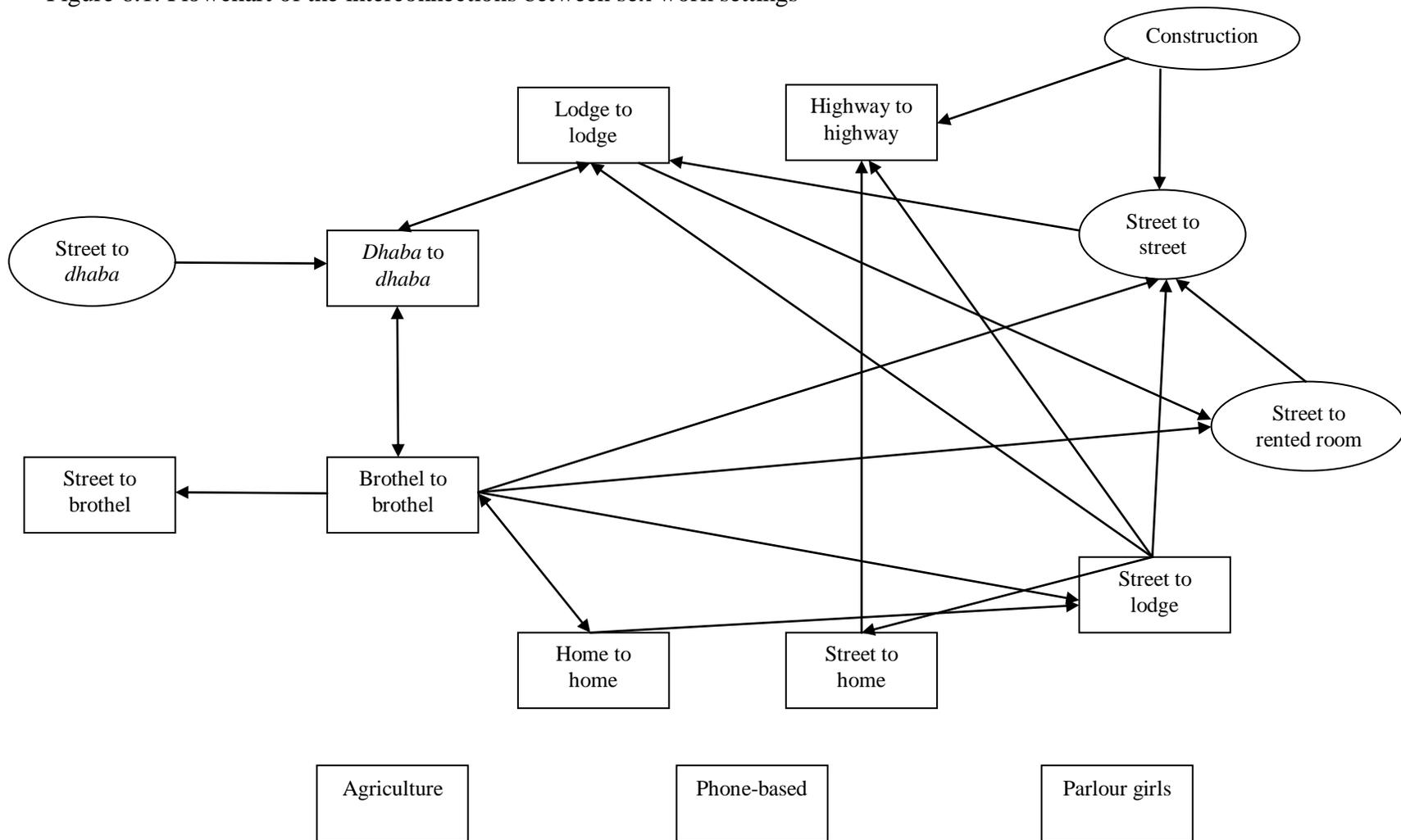
The data also suggest that certain sex work settings are more isolated within the sex work industry than others. In order to better illustrate this, I prepared a flowchart of the interconnections between sex work settings based on the data from Table 6.1 (see Figure 6.1). In the case of the sex work settings listed in rectangular boxes, some participants only did sex work in those places, whereas in the case of the sex work settings in oval boxes, all participants have previously done sex work in some other place. The direction of the arrow is indicative of the direction of movement between the two sex work settings.

Table 6.1. Summary of participants' history of sex work settings, qualitative component

Previous sex work setting 3	Previous sex work setting 2	Previous sex work setting 1	Present sex work setting	Number of interviews	Interview number
			Brothel to brothel	4	13, 34, 37, 38
		Home to home	Brothel to brothel	1	36
Street to lodge	Lodge to lodge	<i>Dhaba to dhaba</i>	Lodge to lodge	1	30
		Street to lodge	Lodge to lodge	1	8
	Home to home	Street to lodge	Lodge to lodge	1	9
			Lodge to lodge	1	18
			Street to brothel	2	39, 40
		Brothel to brothel	Street to brothel	2	33, 35
			Street to lodge	4	3, 5, 7, 21
		Brothel to brothel	Street to lodge	1	6
		Street to rented room	Street to street	1	17
		Street to lodge	Street to street	1	20
		Construction work	Street to street	1	31
		Brothel to brothel	Street to street	1	32
		Brothel to brothel	Street to rented room	2	11, 16
		Lodge to lodge	Street to rented room	1	10
	Street to street	Lodge to lodge	Street to rented room	1	12
			Street to home	2	24, 25
		Street to lodge	Street to home	1	28
	Home to home	Street to lodge	Street to home	1	19
			Home to home	2	14, 26
		Brothel to brothel	Home to home	1	15
			Phone	3	1, 2, 4
			Parlour	2	45, 46
			<i>Dhaba to dhaba</i>	2	43, 44
	<i>Dhaba to dhaba</i>	Brothel to brothel	<i>Dhaba to dhaba</i>	1	27

Previous sex work setting 3	Previous sex work setting 2	Previous sex work setting 1	Present sex work setting	Number of interviews	Interview number
		Street to <i>dhaba</i>	<i>Dhaba to dhaba</i>	1	47
			Highway to highway	1	48
		Street to lodge	Highway to highway	1	29
		Construction work	Highway to highway	1	49
		Street to home	Highway to highway	1	50
			Agriculture	4	22, 23, 41, 42

Figure 6.1. Flowchart of the interconnections between sex work settings



Note: In the case of the sex work settings listed in rectangular boxes, some participants only did sex work in those places. In the case of the sex work settings in oval boxes, all participants have previously done sex work in some other place.

The movements illustrated in Figure 6.1 are based on data from very few cases and hence caution is recommended in interpreting the results. However, the documented movements indicate that there is some movement between sex worker settings and that women working in some settings are more mobile than others. Below I discuss common movements between sex work settings and some of the reasons mentioned during the interviews for these movements.

The women who are currently working in brothels reported that they began their sex work career in a brothel (not necessarily the same brothel) (Interviews 13, 34, 37, and 38). The exception was that of a *Devadasi* woman that reported having previously practised sex work in her home in the village (i.e. home to home sex work) (Interview 36). The opposite situation was also encountered: another *Devadasi* woman reported that she returned to her village after working in the brothel for a while, and continues to practise sex work in her home (Interview 15). Other participants continued to practise sex work in the cities, but moved to other sex work settings where they have more autonomy over their work, such as soliciting clients in public places and entertaining them in brothels, lodges, rented rooms or public places: “I... was doing *dhande* [sex work] in the brothel. Later, as I came to know things, I started to wander in the bus stand and take clients” (Interview 35).

Some women find out about lodges where one can practise sex work and begin working there from the start of their career (Interview 30). Other women decided to work in lodges after first soliciting their clients in public places and taking them to lodges and/or other places (Interviews 8, 9, 18, and 12). Practising sex work in lodges is considered advantageous: “When sitting here [in the lodge] there is not much tension” (Interview 29). However, lodges are sex work settings with high FSW turnover and hence, whether they want to or not, sooner or later the women reported leaving the lodges for another setting, usually soliciting clients in public places and entertaining them in various places: “When

new younger girls come, we have to leave, isn't it? They will sleep with us once or twice, but why they will sleep with us always? They will say 'These are not new.' So the business will go down, then we feel bad. So I left" (Interview 10).

Women reported some mobility between various street solicitation sex work settings, as women who solicit clients in public places sometimes change the place of sex, depending on a number of reasons. The data are illustrative of the situation where women currently do street to street sex work after having entertained clients in lodges or rented rooms (Interviews 17, 20). Women reported that the change in the place of sex was due to reasons related to a change in the availability of those places, as a result of police actions or strained relations with various actors:

*Respondent:* We had to run, the police came.

*Interviewer:* The police knew that house?

*Respondent:* All the policemen knew.

*Interviewer:* That's why they shut it down?

*Respondent:* Yes. They sold the house.

*Interviewer:* That's why you started going to open areas?

*Respondent:* Yes." (Interview 17)

"I used to feel scared [when I was going to the lodge] because of these police problems and also *gundas*, because whatever we earn they take it from us and go." (Interview 20)

Of note, certain sex work settings are relatively isolated within the sex work industry, namely phone-based, parlour girls and agricultural labourers.

## **6.2. Discussion**

Based on information from programmers working in the district, thirteen different types of female sex workers were documented in Belgaum district, namely brothel to brothel, lodge to lodge, street to brothel, street to lodge, street to street, street to rented room, street to home, home to home, phone-based, parlour girls, *dhaba* to *dhaba*, highway to highway, and agriculture workers. These categories of FSWs operate in different ways and have a

varying degree of autonomy, largely depending on the presence and role of the network operators they deal with. Patterns of mobility between sex work settings have also been explored.

Broadly speaking, certain sex work settings are specific to urban areas, others to rural areas, while others can be found in both. This needs to be taken into account when discussing the typology of sex work because rates, demand and client characteristics differ between urban and rural settings. Brothel to brothel, lodge to lodge, street to brothel, street to lodge, street to street, phone-based sex work and parlour girls usually operate in urban areas. Agricultural labourers who practise sex work can be found in villages. Home to home, street to home, street to rented rooms sex work and construction labourers who practise sex work can be encountered in both urban and rural areas. *Dhaba* and highway-based sex workers come from both urban and rural places and operate on highways connecting cities.

According to the 1956 Immoral Traffic (Prevention) Act “‘brothel’ includes any house, room, conveyance or place, or any portion of any house, room, conveyance or place, which is used for purposes of sexual exploitation or abuse for the gain of another person or for the mutual gain of two or more prostitutes”. However, this represents a very broad definition that encompasses a variety of sex work settings, including rented rooms and lodges. According to NACO, brothels are “buildings or residential homes where people from outside the sex trade know that sex workers live and work... a place where a small group of sex workers is managed by a Madam (*gharwali*) or an agent” (National AIDS Control Organization, 2007a). Of note, brothels include a range of sex work settings, from houses where sex work takes place and which are located in well-known red-light areas, to houses located outside the red-light areas but which act as brothels due to the organized nature of the work. A study conducted among brothel-based FSWs from three districts in

Karnataka identified three brothel subtypes: (1) women working under contract in brothels located in red-light areas run by *gharwalis* and brought there by network operators, (2) FSWs who work in houses of senior or retired sex workers a few hours per day (without a contract), and (3) FSWs who work in houses run by *gharwalis*, but live either in their own homes (local women) or in separate houses rented by the brothel madam (non-local FSWs) (Raghavendra et al., 2009). In the present study, participants labelled as ‘brothel to brothel FSWs’ reported working in ‘brothels,’ which are houses located in specific areas of the localities known for their activities.

Kotiswaran (2008) categorised women working in brothels according to their labour relationship with the brothel madam into bonded FSWs, FSWs working for the *gharwali* without being bonded, and FSWs who rent rooms in the brothel. All these categories of FSWs were documented in the present study. The participants currently working in brothels (brothel to brothel FSWs) reported to be working for the *gharwali*, but none of them reported being bonded. Some of the study participants currently working in other sex work settings who worked in brothels previously reported having been bonded; however most of these brothels were in Mumbai and Pune, only one was in Belgaum (Interview 6). The third category of FSWs consists of street to brothel FSWs who solicit clients in public places and take them to brothels where they rent rooms on a client basis.

Similar to brothels, the lodges in Belgaum district where sex work is solicited and entertained are generally known in the locality by men who visit sex workers regularly. However, the two sex work locations operate quite differently; brothels are run by *gharwalis* who are usually former sex workers, while lodges are managed by men hired by lodge owners. Most lodge to lodge FSWs in Belgaum worked in the lodge on a daily basis, from morning until evening. However, in other places (e.g. Mangalore city, Dakshina Kannada district, Karnataka) women also reside in the lodge and are available for clients on

a continuous basis, similar to the situation of most brothels (Karnataka Health Promotion Trust, 2009). In this case, advances were sometimes taken against the women and they had to live and work in the lodges until the contract was completed and the money was repaid.

Street-based FSWs represent the majority of female sex workers in Belgaum district and in South India in general (Chandrasekaran et al., 2006). While female sex workers who solicit clients in public places take their clients to various locations, they seem to have a strong preference for a certain type of place. I distinguish between street to brothel, street to lodge, street to street, street to rented rooms and street to home FSWs. Sex workers have various reasons for choosing the respective location and, as shown in the Chapter 4, these choices affect the level of risk and vulnerability to HIV they experience.

Within a town's boundaries, potential clients can usually find female sex workers in lodges or in public places. In many ways, *dhabas* represent the equivalent of lodges outside the town boundaries. Similarly, highway-based sex work is a version of out-of-town street to street sex work. In other words, drivers who travel between towns can stop on their way and pick up sex workers either in *dhabas* or on the highway itself. While *dhabas* and lodges are two different sex work settings, some of the participants practising sex work in *dhabas* use the terms interchangeably: they say they practise sex work in lodges, while they actually mean they practise sex work in *dhabas*. The possible confusion related to the nomenclature used by the sex workers to designate the places where they solicit and have sex needs to be clarified and taken into account when developing instruments for quantitative surveys.

One might wonder how clients get to know that home to home FSWs practise sex work. Many home-based sex workers, especially in northern Karnataka, have been initiated into the *Devadasi* tradition (Blanchard et al., 2005; Orchard, 2007; O'Neil et al., 2004). The qualitative data show how in a village context people know the *Devadasi* women who

practise sex work and come to their houses on their own. However, one should not confuse or equate home-based sex work with *Devadasis*, as there has sometimes been the tendency. While many of the home to home FSWs are *Devadasis*, there are many women who practise sex work in their own homes and are non-*Devadasi*. Many non-*Devadasi* women start by soliciting clients in other settings e.g. public places, which allows them to develop a clientele and then, with their clientele established, practise sex work only in their homes. However, the data are not illustrative of this situation, probably because home to home study participants were selected from rural areas and hence the urban non-*Devadasi* group was not represented.

The study provides one of the few accounts of the mode of operation of a number of emerging categories of female sex workers, such as phone-based FSWs, parlour girls and agricultural workers. While both phone-based FSWs and parlour girls use phones in order to keep in touch with their clients, beauty parlour girls meet potential clients through their work, when they go to someone's house for functions (e.g. weddings). This represents the initial contact with the client; the sex usually takes place at a hotel or someone's house, away from the place of work. It should not be assumed that all women working in beauty parlours practise sex work, however there seems to be an increase in their involvement in sex work, especially in the cities. To my knowledge, the mode of operation of parlour girls has not been discussed by other studies. However, National AIDS Control Organization (2007a) mentioned that there are "other sex workers whose primary occupational identity may vary, but a large proportion of their occupation group, but not all, often engages in commercial sex regularly and in significant volumes". Within this group of FSWs (that includes parlour girls) some studies have mentioned bar girls and singing and dancing girls (Chandrasekaran et al., 2006; Family Health International, 2001b; 2001a; Mukhopadhyay, 1995; Nag, 2006; Raghuramaiah, 1991; Venkataramana & Sarada, 2001).

In the context of India, researchers have documented call girls, an 'elite' category of female sex workers who have rich 'high-class' clients (Asthana & Oostvogels, 1996; Chattopadhyay & McKaig, 2004; Gupta, 2004; Mukhopadhyay, 1995; National AIDS Control Organization, 1997). While such female sex workers do exist in India and most of their client solicitation is done through the phone, they represent only a subgroup of phone-based FSWs. Phone-based FSWs are not the same as call girls; they represent a broader category of sex workers who solicit most of their clients through the phone (Chandrasekaran et al., 2006; Fung et al., 2007; Nag, 2006). When it comes to phone-based sex work, the obvious questions are 'How do the clients get in touch with the women? How do they find out their phone numbers?' Whenever there is a type of sex work when women do not contact the clients directly, one may assume that the mediation is done through agents and it is an organized sex work setting. Hence, it came as a surprise when the participants explained that while there are mediators who connect the women with the clients, they are mainly former sex workers or the clients themselves.

Agricultural workers that practise sex work have been documented in studies conducted in East Godavari district of Andhra Pradesh (Blankenship et al., 2007a; 2007b; Dhopeswarkar, 2007; Hanck, 2006; 2007; Project Parivartan, 2007; West & Irwin, 2007; West et al., 2007). However, most of the documents made available by the Andhra Pradesh team consist of presentations and hence there is little information available about the mode of operation of agricultural-based FSWs in that area. The present study indicates that while agricultural workers who practise sex work do not entertain their clients while they work, the fact that they do agricultural work gives them the opportunity to leave their households unsuspected and interact with people from the village on the way to the agricultural fields and back as well as in the fields. This may also be an indication for the men in the village that the women are economically vulnerable and hence may entertain requests for paid sex

from interested men. Study participants indicated that many of the women who practise sex work in villages are part of this category of FSWs.

A number of studies have been conducted among female sex workers in Belgaum district. O'Neil et al. (2004) discussed the results of ethnographic studies conducted among the *Nat* community in Rajasthan state and the *Devadasi* community in northern Karnataka (Belgaum, Bagalkot, Bijapur and Dharwad districts). Similarly, Orchard (2007) conducted an ethnographic study in the same area in northern Karnataka in order to examine child prostitution among rural young *Devadasis*. The *Devadasi* community was also examined quantitatively, in a study conducted in 18 districts in Karnataka which focused on their socio-demographic profile and sex work patterns (Blanchard et al., 2005). None of these papers focused however on Belgaum district or on understanding the overall sex work industry in the district. Participants in the present study who were *Devadasis* discussed their *Devadasi* status when describing their entry into sex work and their marital status. Aubé-Maurice (2009) conducted a qualitative study on the role of gender on HIV risk among the clients of female sex workers from Belgaum district working in their homes, public places and brothels. However, the study focused on clients rather than female sex workers and not all the sex work settings were taken into account.

This study made a first attempt to examine the issue of the mobility between sex work settings in India and showed that while some of the study participants had practised sex work in a number of settings, many did not. This questions the opinion of programmers and researchers who argue that the typology of sex work is not a useful tool for HIV programming because female sex workers tend to practise sex work in many settings at the same time and to move between sex work settings throughout their lifetime.

I identified the main patterns of movements between sex work settings and discussed them in the previous section. In addition, other patterns have been observed

elsewhere and were not identified in this study. As mentioned above, while some home to home FSWs develop their clientele by soliciting in other settings e.g. public places before soliciting and entertaining clients only in their homes, this situation was not reported in the data. Similarly, none of the participants mentioned having done both brothel to brothel and lodge to lodge sex work. However, previous research conducted in Karnataka has shown that in other districts women move between brothels and lodges located in various cities for contracts of short duration (Karnataka Health Promotion Trust, 2009). In these other districts, lodges operate in a similar way to brothels and women live in the lodges for the duration of the contract; this does not happen in the study district, which is probably the reason why no such accounts were reported in the data. The qualitative data also suggest that parlour girls and phone-based sex work are fairly isolated sex work settings likely due to a number of factors; these are fairly new sex work settings, operate slightly different than other types of sex work, and service a relatively different clientele. Moreover, the women make great efforts to keep their activities secret.

The discussion of mobility between sex work settings is based on data from only 50 interviews with female sex workers. The interconnections between various sex work settings and their volume can only be thoroughly understood based on data from larger quantitative surveys. This issue is particularly important in the context of assessing the HIV risk of female sex workers in different settings, as HIV-positive women currently working in a certain place might have been infected in a different setting. From an epidemiological perspective, the mobility of female sex workers between sex work settings can have implications for the HIV transmission dynamics in a certain area.

### **6.3. Limitations**

The findings of the qualitative study should be interpreted while taking into account a number of limitations. The study was conducted in Belgaum district; while an attempt was made to select the most ‘average’ of the IBBA districts, the findings cannot be generalized to the entire population of female sex workers in Karnataka. The study employed in-depth interviews with female sex workers, although other methods might have also been appropriate (at least to an extent) for answering the research questions. While the study consisted of 50 interviews, the sample was stratified by sex work setting, resulting in a relatively small number of interviews per sex work setting and hence saturation may not have been reached (especially for certain settings e.g. parlour girls). The sex work settings were selected based on information provided by programmers working in the study district, as programmers were believed to have a better ‘overall’ image of the sex work industry in the district; however, this information could have also been obtained from the female sex workers themselves.

Participants for the qualitative study were selected with the help of peer educators working with BIRDS, the local NGO in Belgaum district. While this helped the enrolment process, it may have represented a source of bias. The female sex workers who are in contact with peer educators are prone to be members of the sex workers’ collectives and tend to access the services offered by the HIV programme. Due to this, they may be prone to provide socially desirable information, especially with respect to condom use. Moreover, participants were volunteers who offered to take part in the study, which may have introduced additional bias to the results.

The interviews were conducted by a female interviewer speaking Kannada (the local language), Hindi and English. While this minimized the possibility of receiving socially desirable answers, other options would have been to conduct the interview myself

with the help of a translator or to use more than one interviewer. The interview guide was semi-structured. Hence, the interviewer was provided with enough guidance on the topics to be explored during the interview, without imposing which questions to ask; at the same time, this interview format may have resulted at times in not asking certain questions that might have been appropriate. Nevertheless, I went through the mock interviews and the interviews conducted in the first few days of data collection with the interviewer, and I advised her on other questions that could have been asked at various times during the interviews. While the data were translated using only one translator, the translated data were read and any unclear sections were sent back to the translator for clarifications. The data were read a few times and analysed using a code list developed while reading the interviews; another option would have been to use a ‘grounded’ approach in analysing the data.

Study participants may have provided socially desirable information, especially with respect to certain topics, such as alcohol consumption (which will be discussed in the next chapter) and the relationship with network operators. In case the participants did not fully understand or believe that the information they provided is confidential and anonymous, they may have felt afraid to ‘complain’ about the person supervising the place where they practised sex work e.g. brothels, lodges, *dhabas*.

## Chapter 7. Typology of sex work and HIV risk, Karnataka

In chapter 4 I showed that in Karnataka certain types of female sex workers are at higher risk for HIV than others depending on their sex work setting. However, the places of solicitation and of sex themselves do not place women at higher or lower risk; they are proxies for other vulnerability factors specific to each sex work setting which likely result in the variation in HIV risk across categories of sex workers. Exploring the difference in vulnerability by setting represents the focus of this chapter. The chapter is organized in three sections: results (section 7.1), discussion of results (section 7.2), and limitations (section 7.3).

### 7.1. Results

#### 7.1.1. Brothel to brothel female sex workers

Brothel to brothel female sex workers represent one of the groups of women at highest risk for HIV. This is partly because they have a high client volume, up to 10 clients per day: “8-9-10 [clients per day]” (Interview 34). Most commonly the women charge about Rs100 per client and keep half of this amount for themselves:

*Interviewer:* How much do they give?

*Respondent:* 100 to 200 Rs, half for them, half for us.” (Interview 36)

*Interviewer:* How much do they give?

*Respondent:* 100, 50, 200, like this.

*Interviewer:* How much do most people give?

*Respondent:* 100 Rs.” (Interview 37)

Because they work in brothels run by *gharwalis*, the women usually have very little freedom to choose their clients and to refuse to entertain them, which may affect the extent to which they use condoms consistently: “She [the *gharwali*] won’t listen if you refuse.

Even for a meal we have to pay and if we refuse [the client] she will ask ‘What will you do about your meal?’ We have to go, we can’t refuse” (Interview 34). Exceptions are the days when women are menstruating and when they have symptoms of sexually transmitted infections: “When I am not feeling well, when I feel ‘heat’ problems, [meaning] burning sensation in the vagina, itching and all - it’s because of eating mutton” (Interview 36). Some women also mentioned that they tried to avoid taking clients “if they [the clients] are drunk, if they are quarrelsome” (Interview 38).

In a brothel context, the attitude of the *gharwali* towards safe sex is paramount. Some women say the “*gharwali* was good, she used to say ‘If it’s like that [the client does not want to use a condom], go away.’ However much money they had given, she would give the money back and send them away” (Interview 15). At the same time, other women complain about the *gharwali*: “If we sent any client back she used to get angry, so we did not use [condoms] regularly” (Interview 32).

*Gharwalis* are sometimes perpetrators of violence (as shown in the previous chapter) and at the same time protectors of the sex workers against other perpetrators. In addition to *gharwalis*, there are a number of other possible perpetrators of violence, including *gundas* and the police. The *gharwali* usually has an agreement with them that guarantees the women’s safety: “There is [*gunda*] problem, they have to be given 50, 100 every week, they won’t go otherwise” (Interview 34). However, one participant mentioned that while practising sex work in a brothel “we had to do for free [with *gundas*]” (Interview 22). Moreover, despite these agreements, the women mentioned an incident when, as a result of negative media coverage of sex workers, the community put pressure on the police to close the brothels:

“They showed on TV about our women... and it was a big problem and many of us had to leave. They showed a sex worker and she said I earn Rs10000, Rs20000, like that - don’t know if it is true - and they showed our area and all. And then they said ‘What are the

police doing?’ and all that. Now our community people have become very strict.” (Interview 34)

Participants gave accounts of incidents when they were abused by policemen: “They beat there [in the brothel], they say all kinds of things [like] ‘Why can’t you work and eat?’, ‘Why do you do this?’” (Interview 34).

Brothel to brothel FSWs tend to have clients from low paid occupations: “laborers, drivers, cleaners, auto drivers” (Interview 34). Study participants mentioned that certain types of clients are less prone to use condoms (“Village people don’t want to use condoms” Interview 37), while others initiate condom use (“[The ones who work] in the office, bank and all, they bring packets [of condoms]” Interview 36). In general women report that more educated clients are more likely to insist on condom use.

Some of the women admit drinking in order to forget their problems: “Yes, because of the tension, thinking about children, after coming here, ‘What to do for food?’ I used to drink because I was not able to sleep” (Interview 32). When they do admit drinking, the women usually say they drink small quantities of alcohol, mostly beer. Women seem to drink more if they entertain clients during the night: “I drink beer with clients... in the night” (Interview 37).

Most women admit that many of their clients are drunk during their visits to the brothel and that some of the clients, especially during the night, drink in the brothel itself: “Those who come for one time they used to drink and come, but those who stay for the night used to bring and drink” (Interview 32). Nevertheless, women insist that they manage to use condoms consistently with their clients, even when drunk:

*Interviewer:* If the client drinks and comes then it affects condom use?

*Respondent:* Yes, it does, but what to do? We put it on, then take their thing and put it in ours. [We think] ‘What if they remove and throw in the intoxication?’ So we do like that, we won’t let him touch. If we do it he will like that and our work will also be done quickly. So we only take his thing and put it in ours.” (Interview 34)

Some brothel to brothel FSWs discuss condom use upon negotiation of the money, outside the room where the sex takes place:

“That was decided outside only. They were asked and then let inside, so they did not trouble after coming inside. Very few people trouble, very few refuse. When they give money they are asked whether they have condom. Those who knew used to bring the packet with them.” (Interview 15)

In case the clients do not agree to use condoms, the participants claim to refuse to have sex with them. Some women say they do not discuss condom use per se, instead they:

“‘Motivate’ them somehow, then they won’t have any chance to go out. We don’t immediately give condom in their hand, as soon as they come in, [saying] ‘take this condom,’ like that we don’t do. We make them get aroused, remove their clothes and put on the condom. When they are aroused, they won’t be able to come out, they have to do and come.” (Interview 34)

The HIV prevention intervention programme which is in place in the study district ensures regular supplies of condoms free of charge to brothels:

*Interviewer:* Where do you get condoms?

*Respondent:* Every Wednesday we go to the office and get them [condoms]. These people [peer educators] also come, they come twice a week and tell us...

*Interviewer:* Do you get condoms for free?

*Respondent:* Yes, in the office.” (Interview 36)

Some clients bring their own condoms, but they represent a minority:

*Respondent:* Some important people bring [condoms] from the medical shop, educated people also bring; for others we use those that we have with us.

*Interviewer:* Out of ten, how many are people like that? ...

*Respondent:* Two maybe.” (Interview 37)

“2-3 in a day bring [condoms] and some feel that we will have [condoms in the brothel], so they don’t bring.” (Interview 38)

The participants visit the programme facilities on a weekly basis: “We come to the office on Wednesdays... We take condoms and go [there] every week, we come and see the doctor” (Interview 34). With the exception of that day, the women do not visit the drop-in-centre, as they need to be in the brothel for most the day.

### 7.1.2. Lodge to lodge female sex workers

Lodge to lodge female sex workers represent another category of women at high risk for HIV in Karnataka. Women who solicit and entertain clients in lodges tend to have many clients, around 10 clients per day: “10, 15 or some days just 5 [clients]” (Interview 30). Sex workers usually come to the lodge 5-6 days per week: “Except Tuesdays, new moon days and full moon days I come everyday” (Interview 9). The charges in lodges seem to be higher than in brothels; clients pay at least Rs200, which is shared between the lodge manager and the sex worker: “We will have this agreement that 200 Rs will be charged, 100 they keep as room rent and 100 for us” (Interview 8).

Some lodge to lodge female sex workers say they have the ability to refuse clients they do not want to have sex with, while others state the opposite:

“Here the owner only sends. Outside we can send the client out if he acts smart, then we can send them away, but here we can’t do that. If we do anything like that, they go and ask for their money back from the owner. ‘This woman is not ok,’ saying that they take the money back. So we have to finish and come.” (Interview 9)

As one of the participants put it, if they do not want to entertain certain clients, they are free to leave the lodge: “It’s up to us. If we don’t want, we can just go; no one forces us” (Interview 8). However, this basically means that as long as they work in the lodge, they need to have sex with any client sent by the lodge manager and refusal to do so equates with leaving the lodge:

“He [the client] will have paid, if such drunks come, if the owner has made us sit, whatever client comes we have to do. They will say ‘A client is there, go do’, they threaten us, they won’t allow us inside again otherwise. ‘Why you don’t go?’ like that he will say. We have to listen to him. And it is unavoidable for us... We have to listen to him so that the next time he will let us in, so we have to manage him carefully.” (Interview 3)

There are not many lodges where women can practise sex work in a locality and because one can earn a good income by practising sex work in lodges there are always more women who want to work in the lodge than available lodges: “That [lodge] is also closed because

of the police. This [lodge] is the only one that is open. There is another lodge in the market, that is also closed” (Interview 18).

Consequently, as in the case of brothels, the extent of condom use depends a lot on the attitude of lodge managers regarding safe sex. Some lodge managers make sure the women use condoms consistently with their clients: “He [the lodge manager] says ‘use condom and do’ but if he [the client] says it’s not fun, then the manager says ‘Take your money and go, we get 100 other clients’” (Interview 12). Others limit themselves to providing condoms (“They give us two [condoms] and send us. They give us money and condom” – Interview 9), while other lodge managers might leave the matter to the clients’ preference. Nevertheless, the women claim that even if the lodge manager is the one who chooses the clients, they still have the ability to use condoms:

*“Interviewer:* In case the client argues and fights about condom?

*Respondent:* Then we give his money back and send.

*Interviewer:* What will the manager say?

*Respondent:* We tell the manager ‘We won’t do without condom.’

*Interviewer:* And if the manger says ‘Don’t come from tomorrow if you cause loss like this’?

*Respondent:* We tell them ‘I won’t come, but I won’t go without condom.’

*Interviewer:* They keep quiet?

*Respondent:* Yes.” (Interview 30)

Condom negotiation *per se* takes place in the room and usually no other people than the woman and the client are around:

*“Interviewer:* When do you tell the client about using condom?

*Respondent:* As soon as they come in the room, we shut the door and tell him to put on condom, and they put on condom and then we finish the work and go.” (Interview 8)

With the exception of the lodge manager, who might get involved in the discussion in case the client does not want to use a condom and of the room boy who sells the condoms to the sex worker, no other people are involved in the condom negotiation process.

Most women who work in lodges say that “there is no *gunda* problem in the lodge” (Interview 30). However, one participant mentioned an incident of violence inflicted by *gundas*:

“These *gundas* gave me this disease... They used to see me going everyday and ten of them were there and they beat up the manager and dragged me away and did it to me... I was doing in the lodge itself.” (Interview 10)

Lodge managers usually have agreements with the police so that the lodges do not get raided:

“They [the police] take ‘entry’ [bribe]... They inform the girls to go away.” (Interview 10)

“They tell us when police comes, they warn us and send us away.” (Interview 30)

However, as in the case of brothels, when police raids take place, lodges are some of the first places to be raided: “There is lot of police trouble, that is there, they catch us and go... Twice I have been caught” (Interview 18). Women who do not work in lodges often mention this as one of the main reasons why they choose not to practise sex work in lodges: “In the lodge there is always fear about police raid. Here [in rented rooms] we can stay for more time and relax; customers like that, so they take us to rooms” (Interview 10).

While women working in lodges are protected from violence from clients by the lodge manager, some interviewees mentioned that such incidents occur on a daily basis:

*Interviewer*: Clients also trouble you?

*Respondent*: Yes.

*Interviewer*: Have you had any experience where they beat you?

*Respondent*: I haven’t had, but I have seen.

*Interviewer*: Where?

*Respondent*: Here in the lodge only.

*Interviewer*: Who resolves the fight?

*Respondent*: The manager and other clients who are standing around.

*Interviewer*: Why do they fight?

*Respondent*: If she doesn’t sleep properly, if it doesn’t open.

*Interviewer*: They beat?

*Respondent*: Yes.

*Interviewer*: How often does it happen?

*Respondent*: Once a day.” (Interview 30)

Most men who come to lodges are ‘professional’ clients of sex workers, in the sense that they visit sex workers on a regular basis: “They are generally regular clients” (Interview 8).

They have various occupations, usually low paid:

*“Interviewer: What work they will be doing?”*

*Respondent: Drivers, agriculture and other jobs.*

*Interviewer: Who comes more?”*

*Respondent: Drivers.” (Interview 30)*

With few exceptions (“once in a while when there is tension I drink” Interview 9), most lodge to lodge female sex workers claim they do not drink alcoholic beverages. They admit that many of their clients drink before coming to the lodge, but they say that the very drunk clients are not allowed in the lodge by the lodge manager, because they are troublesome and need more time for sex than other clients: “First of all the owner doesn’t allow if the client is too drunk, because they cause trouble. Otherwise they use [condoms], if they don’t use we ask them to leave” (Interview 8). Alcohol consumption is claimed not to affect the women’s ability to use condoms consistently:

“We have to manage and finish, if they remove also. Even if we have to put on three condoms, we have to do and finish in ten minutes; we usually put two condoms. If he removes, then we have to again make it erect and put the condom on again. Even then, if he creates problems we send him back. If we say we can’t, they go away.” (Interview 9)

Because lodges where sex work takes place are generally well known within a locality, the programme staff is aware of their location and provide them with free condoms on a regular basis: “These people [peer educators] only bring and give to the lodge and they give free of charge” (Interview 18). However, in some cases the women working in the lodge need to buy the condoms from the lodge manager:

“We buy by paying Rs10; two they give. If we don’t buy they say ‘Don’t come here.’ What should we worry about then, coming here or just paying Rs10 and buying? ‘We won’t give [you a room], don’t come,’ like that they say. We will be caught on both sides; if we don’t buy, then they say ‘don’t come.’” (Interview 9)

In Chapter 6 I showed that lodge to lodge FSWs have little time at their disposal to spend with each client. While peer educators visit lodges regularly (“they come here and take us [to the office]” – Interview 8), they face the same time pressure in doing their jobs in lodges. Consequently, sometimes condom use is promoted without also sharing correct knowledge about HIV transmission: “If someone has HIV and a mosquito bites that person and it bites us, then we get [HIV]. Or there is a pin prick or something, then also it comes” (Interview 8). As in the case of brothels, because they need to work all day in the lodge, the women tend not to visit the drop-in-centre and interact with other sex workers: “Why should I go and sit there [in the drop-in-centre] leaving my *dhande* [sex work]? If the lodge is closed then I go, if there is any problem then I go” (Interview 9).

### **7.1.3. Street to brothel female sex workers**

Study participants who solicited clients in public places and entertained them in brothels reported having about 5 clients per day: “I do 4-5 [clients]” (Interview 33). One of the participants however reported 10 to 15 clients per day, similar to the client volume usually reported by women working in brothels or lodges (Interview 39). The women usually charge clients Rs100 or less and have to pay about Rs20 for using the brothel: “70 to 100 Rs, like that if they give. We bring [them] to the brothel to save money” (Interview 39). However, because they have fewer clients their total income is lower than that of brothel to brothel female sex workers.

As in the case of other women who solicit clients in public places, street to brothel sex workers have the freedom to choose their clients. Their reasons for refusing clients are sometimes of a personal nature: “If they are old and like my father’s age, then I refuse” (Interview 33); or “If we are not feeling up to it” (Interview 39). Street to brothel female sex workers solicit clients on their own and hence the choice of using condoms or not with

clients is left to them and no other network operators are involved in making that decision: “[The *gharwali*] is like a mother, she does not say anything” (Interview 33).

Because they solicit clients in public places, street to brothel female sex workers are sometimes harassed by *gundas*: “They [the street thugs] pester, they ask for money. When I was new they have done it, they took away my purse and all” (Interview 40). In addition, because they do not have the protection of *gharwalis* or lodge managers, policemen sometimes threaten to arrest them and request money or free sex in exchange of their support: “He [the policeman] will sleep for free and go and some will say there will be a raid tomorrow and ask for money. We have to go [have sex with them]” (Interview 35).

The participants explained that many of the clients drink before coming to them or want to drink with the women:

“Some [clients] say ‘will give 100 Rs more, let’s get it and drink. There is tension, I want to enjoy’” (Interview 35).

“*Interviewer*: Clients drink and come [to you]?”

*Respondent*: Yes, [but] they drink with me also... If they are too drunk we don’t take them, but a little [it’s fine], means if we know them they tell us ‘I am drunk, take care and manage’. If they are very drunk we don’t take them.” (Interview 33)

While some sex workers say they do not drink alcoholic beverages with clients, other say they actually prefer if the clients drink so that they have more control over them:

“They should also not drink too much, we should also not drink too much. We should be ‘simple,’ we should make them drink more and we should drink less. What I do [is] I only put on the condom, I don’t give it in his hand. What if he tears it or removes it?... I say I will do it and hold him and put it and say I will take you inside. If you let them do it, they may pinch the end. Some don’t want to use, so we only make them drink for the sake of it... It’s not just that it will be dark and all, at times no light. He will say ‘I will put it’ [but] how will I know he has used? So we only put it.” (Interview 35)

Some of the participants say they discuss condom use with clients upon solicitation in the public place: “If we don’t tell them [in the public place], then they come here [to the brothel] and refuse. Should we send them back? There only we finish the discussion” (Interview 39). Other women do not try to discuss condom use at that time; instead:

“We say yes in front of him. We want money for our stomach so we don’t refuse. We take him, remove his clothes, remove ours, then when he is enjoying, we remove it from the packet and tell. We keep it in the purse. If we tell [him before] he goes. When his thing is up then he has to do. We both remove clothes for Rs20 more, then his thing will be up and where will he go? He will do and go, so he uses. If you ask in the beginning itself he will just go.” (Interview 35)

Condoms are easily available; women get them through peer educators or directly in the brothel: “There is no problem about condom for him [client] or me... They [condoms] are there in *gharwali*’s house also... Peers give them and she gives, they are free, she gives [condoms]” (Interview 35). Street to brothel female sex workers are accessible to programme staff, either in public places where they solicit clients or in brothels where they have sex:

*Interviewer:* Peer educators meet you?

*Respondent:* Yes.

*Interviewer:* Where?

*Respondent:* Near the bus stand, near her [*gharwali*’s] house.

*Interviewer:* Where do they meet you more often?

*Respondent:* Near the bus stand.

*Interviewer:* How often?

*Respondent:* Two-three times in a week.” (Interview 35)

Like other street-based FSWs, street to brothel FSWs also tend to visit the drop-in-centre, rest and socialize with other women from their community: “I sleep here [drop-in-centre], we drink tea, eat together. They give condom, they come and call if there is meeting” (Interview 33).

#### **7.1.4. Street to lodge female sex workers**

The analysis conducted in Chapter 4 has shown that in Karnataka street to lodge FSWs are one of the categories of sex workers at highest risk for HIV infection and, with the exception of brothel to brothel FSWs, have the highest client load compared to other categories of female sex workers covered in the survey. The sex workers selected in the qualitative study had between 2-3 clients per day to 6-7 clients per day:

“I don’t take many clients, only two or three.” (Interview 6)

“I used to go everyday to Nippani and do 6-7 clients.” (Interview 28)

Some of them practise sex work every day, while others work a few days per week.

The women charge the clients Rs100 to Rs200 and sometimes even more, depending on the type of client. In addition, the client usually pays for the room rent, which is about Rs60:

“150 Rs for us and 60 Rs for lodge rent” (Interview 3)

“They give 100 or 200 Rs, it depends on the customer. If they are good, they give [more].” (Interview 6)

Street to lodge female sex workers have the freedom to refuse clients they do not want to entertain:

“Some people are rude and if they are drunk or something and if we feel they will harm us after going inside the room, by seeing their face only we refuse if they are rude. If they talk nicely to us and slowly ask ‘Will you come with me?’ then we will go happily saying ‘Let’s go.’ But if he is offensive, no one goes. It’s not just me; nobody goes with such people.” (Interview 3)

The participants claim that if the clients refuse to use condoms, they ask them to pay the room rent and leave without having sex with them:

“If they start any threatening or bossing, I don’t stay there, [or] if he refuses condom. I will give the money back and come out. I will say I have to use the bathroom and get out of there.” (Interview 6)

“If they refuse [using condom] we just come out, why should we stay there, if they only don’t want? Saying ‘pay the rent [for the lodge room] or do whatever you want’” we come out.” (Interview 3)

In the case of street to lodge sex work, the greatest uncertainty comes from the constant fear of police raids, either in public places or in lodges: “To tell you the truth, there is fear from the police, they are the problem” (Interview 3). As in the case of other women who solicit clients in public places, *gundas* can also create problems: “There are problems from *gundas* and the police. But if we drink and irritate the *gundas*, then they also create problems, if we manage them properly, they don’t create any problems to us”

(Interview 3). Some women say *gundas* can be handled if the women stick together: “We beat them if they do anything. We don’t go alone, we all go together. We don’t leave them, these ‘chapter’ [cunning] people, we remain away from them as far as possible” (Interview 5). One participant explains that the presence of *gundas* around lodges discourages her from taking clients there; instead, she prefers to entertain them in open places:

“I am scared of police and these ‘chapter’ people also are there... Those who go to lodge, those who wander around here, if they see her coming from the lodge, they will think that she has money with her. If they come to know that we are doing like this, they don’t leave us alone... It’s not just the money; we also have to sleep with them... For an hour or two hours we have to sleep and that also for free.” (Interview 17)

Most street to lodge sex workers claim they do use condoms consistently, regardless of whether the clients are under the influence of alcohol or not: “some clients are like that [do not want to use condoms when drunk], then we only put on the condom. We don’t depend on him” (Interview 6). However, some women admit that in circumstances when the client is drunk and refuses to use condom, they agree to it:

“Some come drunk, some bring a bottle to the lodge and drink and then do... A drunk person tries to remove it and throw... What to do? We simply lie there, there is no other way... If a circumstance like that comes, we do like that only [without condom].” (Interview 3)

Most sex workers deny drinking: “Girls doing *dhande* [sex work] drink a lot, but I don’t” (Interview 7). Even if some sex workers try not to drink alcohol while entertaining clients, many admit drinking at home to take their mind off things: “I don’t drink and do [sex work], I drink while going home after doing the clients” (Interview 6).

The women do not usually discuss condom use at the place of solicitation, as they find it difficult to talk about condoms in public places: “Good family people will be passing by and if they hear, they feel disgusted about us, so we make them understand when nobody is around” (Interview 3). They usually negotiate condom use once they arrive in the lodge and get into the room where they will be having sex:

“People will be there, it doesn’t look nice [to talk about condoms]. Some [clients] say on road only ‘I won’t use condom, I will give Rs100 more.’ We slowly say ‘Use, you should use, don’t talk now, people will hear. Come to lodge and then we will talk about it.’ Then [at the lodge] we say ‘Use, you should use condom.’ He says ‘But you said there that you won’t use.’ I say ‘If you don’t want to use go away.’ He will have given money, so he uses and does and goes.” (Interview 12)

The amount of time the sex worker is allowed to spend in the lodge is an important constraint for street to lodge FSWs, constraint that can affect their ability to use condoms consistently:

“He says 15 minutes at the most. He says ‘I have other customers.’ The owner charges Rs60 for the room for 10 to 15 minutes. You [have to] do, finish and just come out. If your time is up, then the owner will come and knock on the door.” (Interview 6)

The women can easily get condoms, either in the lodges where they have sex or through the peer educators: “They [condoms] are there in the lodge, sometimes the client also brings. There is a box in the lodge, we can take [from there] and go [with the client]” (Interview 7). Street to lodge sex workers are easily accessible to peer educators, as they solicit in public places on a regular basis. They also tend to visit the drop-in-centre and spend time there with other sex workers:

*Interviewer:* How did you come to know about this office?

*Respondent:* I came to know through peers.

*Interviewer:* Where did they talk to you?

*Respondent:* Here only on the street.

*Interviewer:* How often do you come to the drop-in-centre?

*Respondent:* Every day I am around here.

*Interviewer:* What do you do here every day?

*Respondent:* Nothing, I don’t do any work, I sit and watch film and get up and go. If I am not feeling well, I will go and take tablet.” (Interview 6)

#### **7.1.5. Street to street female sex workers**

Street to street female sex workers have about “3-4 [clients] everyday” (Interview 17) and try to solicit clients on a daily basis: “I go every day, but not every day I get, that does not happen... because there are many women in the bus stand” (Interview 32). The women

usually charge Rs50 to Rs100 and keep all the money for themselves, as they do not have to pay any room rent or network operator:

“They give 50, they give 100... If I go for the night they give 200-300” (Interview 31)

“For ‘open’ [without clothes] they give 100, with clothes 50. Why will we remove our clothes in those bushes? And what if someone comes with a torch?” (Interview 32)

In addition to the problems the police and *gundas* pose for the women who solicit clients in public places, street to street female sex workers are particularly vulnerable to possible violence from clients. These experiences of violence from clients may or may not be associated with lack of condom use:

“These cunning people cheated me. I believed him thinking he will pay money. There was this client and he asked me to come. He said ‘Let’s go to the fort and do there.’ He was alone and I went in his vehicle. We went inside the fort and 5-6 other men were there. It was a very hot day and the sun was glaring down, it was open on the top. They all did with me, every one of them in that hot sun and did not even give me a rupee. They took whatever money I had and I haven’t seen their faces since then... They had brought condom packets with them... [Then] there was this guy near the burial ground, he used to act as a pimp and he said ‘There is one client, come,’ and of all the places he took me to the graveyard. Someone must be there, I thought, and there was this flat stone, it was open, there were 5-6 people totally drunk. They also did like that only and did not even give me a rupee. They did without condom.” (Interview 20)

Among all sex work settings, soliciting clients and entertaining them in public places is probably one of the most ‘courageous’ types of sex work. The participant who recounted the episodes of violence mentioned above says that “now, I don’t have [any problems with *gundas*], I am not scared anymore” (Interview 20).

As in the case of other categories of sex workers, “drunk clients are more” (Interview 31). In addition, some of the women admit to drinking alcoholic beverages while practising sex work:

“If I am going out for long I drink because then it will not remain by the time I come home. Why we drink? If they are ugly or something and we don’t feel like doing but we have to do because of money, to make our mind firm we drink.” (Interview 32)

Nevertheless, the women claim that they manage to use condoms consistently despite their and their clients' high alcohol consumption.

“They will not have control over their body, they will be swaying, we only have to manage them and put... They say they don't get 'tension' [arousal] if they don't drink. To get 'tension' they drink and also they say if they are not drunk, the work [sex] will be over soon. They don't want to finish the work soon, so they drink.” (Interview 20)

“[If drunk] they remove the condom and throw it away, they think that we won't come to know. Then I say 'You get up and wear another one'. They scold and all and say they won't use, but we don't sleep without condom” (Interview 31)

Condom is usually negotiated after they arrive at the place where they will be having sex:

“If we start talking about that they may leave thinking 'Oh, she started about this.' So we take them there [to the open place] and then we tell them” (Interview 20).

Condoms are easily available through the peer educators and the drop-in-centre run by the programme staff: “We take [condoms] from the office... There is a medical shop where they [clients] can buy, but we always keep them, that is more important because they may or may not bring. We always have [condoms] with us in our purse” (Interview 20). Street to street female sex workers are contacted by programme staff in the public places where they solicit clients, such as the bus stand, railway station, theatres and main intersections: “They [peer educators] come to the bus stand. They come wherever we will be standing. They give us condom and all, and tell us about the clinic” (Interview 31). The women also like to visit the drop-in-centre where they can take rest and meet other sex workers; they are one of the main groups of sex workers who make use of the centre: “Now I come every day... I sit in the drop-in-centre, they give tea, we watch TV, there is stuff for make-up” (Interview 20).

### 7.1.6. Street to rented room female sex workers

The street to rented room FSWs who participated in the study had “2-3 clients” per day (Interview 11) and did sex work a few days per week. The women charge the clients Rs100 to Rs200, of which they have to pay the room rent about Rs50:

“It depends on the client, some [pay] less, some more... Around 150 rupees, 100 for us and 50 for the room rent... 200 or 300 is the maximum.” (Interview 10)

“Some give 100, if he is good he pays 200, and some even say 50, if he is poor then we say ‘I won’t come. If I pay 50 Rs rent what is left for me?’ If they give 100 means 50 Rs rent and 50 Rs for me” (Interview 11)

The women have control over their time and the clients they can choose, however most of the times they entertain all the clients they can get because they need the money:

“Sometimes because we feel bored doing the clients we feel like resting at home, so we stay at home... But we don’t refuse, why should we when we have condom? We take drunks and all kinds, but use condom.” (Interview 12)

Because they solicit clients in public places, street to rented room FSWs are vulnerable to harassment and violence from the police and *gundas*, which may or may not be associated with lack of condom use:

*Interviewer:* You have worked in different places. Who creates more problems for women doing *dhandra* [sex work]?

*Respondent:* These only, the police, the *gundas*.

*Interviewer:* What about the clients?

*Respondent:* No, they don’t trouble us...

*Interviewer:* How do *gundas* trouble you?

*Respondent:* They say ‘Come and do for free.’ If we refuse they beat us.

*Interviewer:* The police raid; what else they do?

*Respondent:* They beat us, what else? Saying ‘You do this work.’

*Interviewer:* Some women say the police ask for free sex.

*Respondent:* Yes, they ask for free sex, they say that if there is raid they will not catch them, like that some say.

*Interviewer:* What do you do in such case?

*Respondent:* We have to go [with them], what else can we do? We go then.

*Interviewer:* Do they use condoms then?

*Respondent:* Yes, they use. The police have fears. They are not doing the police job without getting any education, they know everything, ‘I may get the disease, these women go with twenty people,’ so they use condom.” (Interview 10)

While some street to rented room FSWs discuss condom use with the client after arriving at the room, many prefer to clarify the matter from the beginning in order to make sure that the client will be using condom:

“As soon as we find him we tell him about condom use. Otherwise no and then only we take them, otherwise after taking them there they start fighting. Some say then that they will not use, so we tell them first itself.” (Interview 11)

Condoms are available for free through the peer educators and the houses that have rooms for rent: “There are condoms in auntie’s house. Some clients also bring... We also take them from the office” (Interview 11). Street to rented room FSWs are easily accessible for the programme staff, either in the public places where they solicit clients or at the houses where they entertain them:

“They come in the street... More [often] near the rooms” (Interview 10)

“They meet us everywhere... Every two or three days they come and meet us” (Interview 16).

The women also visit the drop-in-centre on a regular basis: “There is a place to sit. Where to sit outside? We can rest here, wash our face, freshen up and go” (Interview 11).

#### **7.1.7. Street to home female sex workers**

Street to home female sex workers have 3-4 clients per day, but some of them only have a few clients per week:

“[I have] 4-5 clients in a week” (Interview 19)

“Some days 4, one day I get 5 and on other days I don’t get anyone” (Interview 28)

Some of them practise sex work every day, while others only work a few days per week.

The women charge the clients about Rs100, although some of them report they also get much more:

“Seeing our condition, some give 100 some say now I have 50, for now take that and I will give again next time” (Interview 28)

“Some give 1000, some give 500, some give 200” (Interview 25)

Because they take the clients to their own homes, they keep all the money they get from the clients.

Street to home FSWs have the freedom to choose their clients. However, one participant explains that even if women theoretically can refuse clients, they usually do not, because they need the money the clients will be paying:

“How can we refuse? We need to fill our stomach, isn't it? If we say no, then they will say 'I know you do, why do you refuse?' If they have less money now we say give more next time and like that we go with them and if they come next time we take more money. But how can we say no? It brings us unhappiness only if we refuse.” (Interview 28)

Because they entertain clients in their own homes, street to home female sex workers are sometimes bothered by neighbours who “talk and all” (Interview 24). Because of this concern, the women try to get clients who are cooperative and will not create trouble once are in their house:

“When we meet them on the road we tell them ‘There are good people around my house. When you come to my house you should not raise your voice, no one should hear your voice. Whatever I say you should listen to that. Why this? Why that? You should not say. Then only you come, otherwise don't come’... They have, one or two have [done like that]. We don't take them again.” (Interview 25)

Some of the women negotiate condoms with clients as soon as they pick them up in public places, while others prefer to discuss condom use after they arrive at their homes:

“When they are picking us up we tell them ‘If you are going to use condom then I will come, otherwise I won't come. Give 50 or 100 Rs, that does not matter, if you don't use I won't come.” (Interview 28)

“[Initially] we talk about when to come [to the house]. He asks what time he should come, if there is anyone at home. I tell him there is no one at home. He comes [to the house] after some time, then we talk [about condom]... When they come only we tell them ‘You should use, otherwise go away.’ We tell them properly, they agree.” (Interview 19)

Condoms are available for free through the programme staff, who usually contact street to home female sex workers in the places where they solicit clients and, if they know their location, also in the women's homes: “They [peer educators] come to the bus stand; in

case we are not there anywhere they come to our house also and give condoms and go” (Interview 25). The sex workers visit the drop-in-centres occasionally, but not as often as other women who solicit clients in public places.

#### **7.1.8. Home to home female sex workers**

While most home to home female sex workers have a few clients per week (e.g. “2-3 [clients] in a week” – Interview 19), some women who work in villages with high demand for sex work have a high client load e.g. 10 clients per day (Interview 14). The women charge the clients “from 50 to 100 and even 200 Rs if they are good” (Interview 14). However, some women mention much higher rates e.g. Rs500 (Interview 15).

In the case of *Devadasis* practising sex work in their villages of origin, the sex takes place in the house they share with their family. Condom negotiation usually takes place in a separate room:

*“Interviewer:* Where would you do [have sex]?

*Respondent:* In our house only. There are separate rooms. My room is separate on this side, there only [I have sex with clients].” (Interview 19)

However, family members are always around and can provide support in case the client is being difficult: “I do [sex work] at home and there are people all around. He [the client] also feels that, because he knows that if he shouts or misbehaves he will be taken to task. So if he wants to use [condom] he will use and do, otherwise he will not [have sex], he will go” (Interview 14). Other home to home FSWs do not usually have many people around their house and no one else is involved in the condom negotiation process.

Home to home FSWs, especially non-*Devadasis*, try to practise sex work without other people knowing their activities: “I have to do this [sex work] ‘natural’ because my children are grown up and they should not come to know... I play this game secretly” (Interview 26). The study participants who did home-based sex work usually managed to

conceal their work from other people and did not have problems with anyone: “No one comes to know. If you go and ask [my neighbours] they will say there is no one as good as me” (Interview 26). For *Devadasis* the situation is slightly different. One *Devadasi* woman mentions the problems she had with the police:

“The police create problem here also, but they do not come here and all. In the beginning they had come. Someone from the neighbours had informed them, they used to come home and ask who is doing [sex work] here and all, they would bring the vehicle and the village people would come and stand by me [saying] ‘We have only kept her, she is poor and she is earning and eating. Who has informed about her? Tell their name. She is taking care of the whole family’ like that they came and stood in front of my house and the village people came. And I opened the door and they told me to get inside [saying] ‘You can’t do this.’ I said ‘There are four people in my house, my old parents, my sisters and my brother, depending on me, I will take them all and come.’ And they said ‘What are you talking about? Get inside.’ I said ‘I am doing this; there is cooperation from my family, so I will come with them. And if you feed us all, it’s good. You work and feed your family, like that only I feed mine by selling my body.’ Then the elders came and everything was settled and now they don’t trouble.” (Interview 14)

This example is illustrative of the support some communities offer *Devadasis*.

The women negotiate condom use in their house or while setting up the meeting over the phone: “I tell them on the phone itself, they don’t have to enter my house if they think like that [not using condom]. Why I need to spoil my life for them?” (Interview 26).

Condoms are made available by the programme free of charge:

“Office people give.” (Interview 26)

“They [condoms] are free and when clients bring they bring from outside, I don’t know about their cost and all... One or two bring. They know I will have [condoms], so some don’t bring, but those who like outside condoms bring [their own].” (Interview 14)

The women already contacted by the programme may not be as prone to visit the drop-in-centre as other categories of female sex workers e.g. those who solicit in public places:

*Interviewer:* Do you go to the office?

*Respondent:* Yes, I go.

*Interviewer:* How often?

*Respondent:* If there is work I don’t go for 2-3 weeks, if I am free then every week I go.

*Interviewer:* What do you do there?

*Respondent:* If there is a meeting I attend that or I go to the clinic for check up.

*Interviewer:* You don’t sit and watch TV and all?

*Respondent:* No, I don't go like that, it's not my habit to go. I am at home only." (Interview 15)

### **7.1.9. Phone-based female sex workers**

Most phone-based female sex workers seem to have only "2-3 [clients] in a month" (Interview 1). However, some women practise sex work on a daily basis and entertain 1-2 clients per day (Interview 2). Phone-based FSWs usually charge higher rates than other categories of female sex workers. The clients pay Rs500, Rs1000, Rs2000 or even Rs5000 and, depending on whether the client has been contacted directly or through another sex worker, the woman may keep all the money or may need to share it with the middle person:

J: When you go to this house, do the clients pay you?

G: No, they give in her [the woman who mediated the meeting] hand.

J: Do you come to know how much they give?

G: They tell, they say if one has given 1000 rupees I have to deduct the house rent, that and this, I want commission like this.

J: So if they give 1000 Rs, that means?

G: It means 600 they keep and give me 400 rupees. In the house they take rent, but there is safety, no one will see. If it's lodge then, people will see. They say if you want to come, come, otherwise no" (Interview 4)

"That client had given 5000 Rs. Aunty had told me take money at first or else they don't give. So I had taken [the money], then she took 2000 and gave me 3000" (Interview 2)

The wide range of rates is indicative of the broad spectrum of sex workers who solicit their clients using phones.

The women claim they use condoms consistently with all their clients: "All [clients] use [condoms], nothing like that; they are also concerned about their body" (Interview 1).

However, one participant who is new to sex work eventually admitted that at times she does sex without using condom:

"If a time comes like that, then we may do just for once and come back. We have gone and money is coming and we also feel scared, so we may do [without condom] and come. We bathe and come back, so there will be no fear." (Interview 2)

Moreover, another interviewee mentioned that in case the sex worker refuses to have sex without condom, clients sometimes request the contact person to give them the phone number of a woman who will agree to that:

“They ask for another contact number where they can go. ‘We will try there,’ they say. She gives numbers if she has good ones. They say they will go to someone who will do without condom.” (Interview 4)

Phone-based female sex workers are fairly autonomous and hence can choose to entertain a certain client or not. This is especially the case when the woman gets most of her clients through her own network of clients: “I have gone to lodge also and come back. I went to Dharwad and came back, [because] he said he won’t use condom. Then another time he said that in the same amount there is another friend of his, [but] I said no” (Interview 1). However, if the woman gets clients by taking the help of another sex worker, she may or may not have the same freedom to choose her clients. One participant mentions an episode when she was forced to have sex with the client against her will:

*Respondent:* Clients are also very bad. They say ‘Take like this, take like that, take in the mouth.’ I said no and he was drunk and started shouting ‘Why do you come here if you can’t do? You take Rs5000 and say you can’t do?’ Then I said ‘Take your money,’ he was not ready to leave me. It was night time and I started crying, I was very hurt. Aunty [the woman who mediated the meeting] said don’t take such things seriously.

*Interviewer:* You can’t refuse the client?

*Respondent:* No, means he drank after going there, he was good, ‘high level,’ we had gone there in a car, the aunty was there with me and another person. He told me to drink and I said no. There were two men and two of us.

*Interviewer:* You did?

*Respondent:* Yes, I had to do, how can I come back? They torture. He came to almost beat me. He said ‘Why you come? Why you sit and do nothing? I am paying you and it is my hard earned money and all,’ he said. I felt very bad.” (Interview 2)

Because the women solicit clients through the phone, they are not usually at risk of harassment from *gundas*: “We haven’t fallen into their [*gundas*]’ hands. If we fall once, then they are behind us ‘Today or tomorrow I will catch you,’ like that. We do sex and we have money, they plan to take it” (Interview 1). Depending on the place where they entertain the client (lodges or private homes), they may risk being caught by the police:

“I feel scared. Who will catch me? What if my people will come to know? What if the police catches me?” (Interview 2)

“[In the house] no one comes to know because nobody sees, there is no fear of police, no raid, but in lodge there can be a police raid.” (Interview 4)

However, maybe the greatest risk they face comes from the clients:

“In the lodge there was another experience. His wife had died; he said ‘I will keep you like my wife’ and started biting me here and there and started torturing me. I said ‘By doing like this only your wife must have died.’ He slapped me twice because he became angry.” (Interview 4)

Because phone-based FSWs charge higher rates than most categories of sex workers, their clients are usually fairly rich, employed and educated: “‘Hi-fi’ people only come, businessmen and such people” (Interview 2). Nevertheless, just as the rate charged by phone-based FSWs ranges a lot, the type of clients they entertain also ranges: “Doctor, engineer, Maratha people who have *saree* shops, business people, construction workers” (Interview 4).

Most participants who solicit clients using phones consume alcoholic beverages while entertaining clients, especially while having sex during the night:

“I sit and drink with them. We compete and I take money out of them in that also. They say ‘If you drink this much I will bet you’ and they give money. I can drink, I say yes... How much ever they say I can drink and yet be in control, day or night.” (Interview 1)

In that case, they drink with the clients, which may or may not affect condom use:

*Interviewer:* Do you drink?

*Respondent:* Yes, a little when I am tense. The aunty only made me drink.

*Interviewer:* The clients drink and come or drink with you?

*Respondent:* No, those who come for an hour don’t drink there, those who come for the night drink.

*Interviewer:* Do they ask you to drink?

*Respondent:* They don’t force as such, they ask once and I refuse. I don’t drink when I go to the lodge, I feel scared. When I go to a friend’s house and all I drink because I will know them.

*Interviewer:* Where do you feel comfortable to do?

*Respondent:* I don’t like to do in the lodge, if it’s a house then it’s better. It will be free, no one will come, there will be no fear. That’s why they take me there; there is no fear of police. And I am alone, means if I drink and all what will happen? Where will they take me?

*Interviewer:* Do you feel that if you are also drunk then will it affect condom use?

*Respondent:* I didn't feel like that then, but now I am feeling like that." (Interview 2)

One of the participants said she first discusses condom use over the phone, when she decides the rate and the details of the meeting (Interview 1). However, the other two participants said they first mention condoms when they meet the client at the place of sex (Interviews 2, 4).

The women said condoms are available for purchase in the places where they have sex. However, unavailability of condoms may result in lack of condom use:

"Today condoms are available in all medical shops. If we go to beach also we find there, very few people say no to it. They are available. In family lodges they may not be there... They [clients] bring with them only." (Interview 1)

*Interviewer:* Do you talk about condom before?

*Respondent:* We don't talk over phone, we ask them [at the place of sex]. If they haven't brought they go and bring when we tell them to. They get it generally.

*Interviewer:* And if it's not available there?

*Respondent:* If a time comes like that, then we may do just for once like that only [without condom] and come back. We have gone and money is coming and we also feel scared, so we may do and come back. We bathe and come, so there will be no fear." (Interview 2)

All the participants in this study were in contact with the programme staff but this may not be representative of phone-based female sex workers in general.

#### **7.1.10. Parlour girls**

Only two women working in beauty parlours were recruited in the study. This is partly because these women tend to practise sex work very discretely and partly because the local NGO implementing the HIV programme among sex workers in Belgaum district does not cover these types of sex workers. When interpreting the findings, it should be taken into account that they are based on only two interviews and the discussion about this type of sex workers should be considered exploratory.

The two parlour girls interviewed reported having very few clients compared to other categories of sex workers, from “1 or 2 in a week” (Interview 46) to 1-2 clients per month (“Once in 15 days or one month” – Interview 45). The parlour girls interviewed in the study charged “1500 Rs for one time” (Interview 46) to “around 2000 Rs” per client (Interview 45). Unlike other types of sex workers, they have another source of income that provides them with sufficient money for their regular expenses, namely the parlour job. Their financial independence allows them to have more control over the number and type of clients they have: “If I am busy and I have customers in the parlor then I refuse, I can’t come” (Interview 46).

Parlour girls practise sex work very discretely and are therefore unlikely to be bothered by *gundas* and the police: “Nothing like that, because people don’t know, only those whose houses we visit for facial and all they know, that’s all, no one else comes to know” (Interview 46). Clients may prove to be a source of concern; however, the study participants had no such complains. The clients are usually middle-class men, educated and with well-paid occupations:

“Doctors, officers, students, educated people, those in court, lawyers, constructors. Those people whose wives don’t come to the parlor, we go their houses. Marwadi [a community] people, they are also customers, their wives are very lean and they refuse sex everyday and these people want more sex, so they come.” (Interview 46)

The women may or may not drink alcoholic beverages while entertaining clients, but clients usually drink: “Yes [they drink], but not much and not hot drinks, just beer, like that” (Interview 46). Nevertheless, the women claim that they can use condoms consistently with their clients despite the alcohol consumption:

*Respondent:* While drinking they say there is no fun with condom and I say that’s not like that and I won’t come without condom.

*Interviewer:* They will leave you after all that he has done?

*Respondent:* He will leave, we give his money and say ‘Take it’.

*Interviewer:* He will leave you just like that?

*Respondent:* He will do.

*Interviewer:* He will use condom?

*Respondent:* Yes... they are all good clients.” (Interview 46)

They usually discuss condom use upon arriving at the place of sex when they are alone with the clients: “We tell them about condom after going there [at the lodge] only” (Interview 46).

In terms of condom availability, whenever the clients do not bring condoms, the women or the clients buy condoms from pharmacies:

“All of them bring... We don’t take with us. In case they have not brought, then they go somewhere nearby and bring.” (Interview 45)

*Respondent:* He will have [condom]. In case the client does not have, we can take from the [lodge] manager.

*Interviewer:* Where else do you get [condoms]?

*Respondent:* From the pharmacy.” (Interview 46)

Study participants knew about the local HIV prevention programme, but were not regular users of the drop-in-centre and other services provided: “I don’t come here [at the office] regularly” (Interview 46).

#### **7.1.11. *Dhaba to dhaba* female sex workers**

Women who practise sex work in *dhabas* seem to have a high client load i.e. “above 10 [clients] only” (Interview 44). However, some participants choose to practise sex work in *dhabas* only a few days per week and have “3-4” clients per day (Interview 43). Women charge about Rs100 per client of which they give about a third to the *dhaba* owner and/or the watchman:

“Whether we get 80 or 100 Rs we have to pay him 20 Rs per client because they only bring us the clients.” (Interview 27)

*Interviewer:* How much you give the owner?

*Respondent:* 50 and we keep 100.” (Interview 43)

However, one participant mentioned much higher rates for non-vaginal sex: “Back side is 1000 Rs and in the mouth it’s 500 Rs” (Interview 44), which is important given that “it’s like that now, at present that’s the trend, they ask like that” (Interview 44).

Clients are usually ‘screened’ by the *dhaba* owner: “Only if he is good he [the *dhaba* owner] used to send. If he [the client] is too drunk then he wouldn’t send him” (Interview 44). In addition, the women sometimes refuse to entertain drunk and difficult clients: “If we feel they are good we do, if they boss around we say no, if they are drunk we say no” (Interview 47). As in the case of other controlled sex work settings, in order for the sex workers to practise safe sex, it is necessary that the *dhaba* owner is supportive of condom use. The study participants reported very good relations with the *dhaba* owners and a positive attitude towards safe sex: “He [*dhaba* owner] says to clients ‘Use condom, don’t go like that, nowadays it’s not good.’ They also tell us ‘Use condom even if they pay less, don’t worry, but don’t go without condom.’ He tells for our own good” (Interview 44).

Women prefer to discuss condoms with clients by themselves just before starting to have sex or during sex (before penetration): “I touch them and make them get in the ‘mood’ [arouse them] and then make them wear condom. When they feel that arousal they will wear [condom], we get money and they get pleasure” (Interview 44). However, in case the client is being difficult, they take the help of the *dhaba* owner to convince the client:

*Interviewer:* When do you tell about condom?

*Respondent:* After we go there. If they agree fine, otherwise we call the owner and tell they are refusing.

*Interviewer:* The owner will agree? It’s a loss for him.

*Respondent:* What to do? Our life is there, no? He says ‘Let it be, you trust us and come, you have children, what if something happens to you?’ So he doesn’t say anything.” (Interview 47)

Police raids represent an important concern for *dhaba*-based FSWs: “They raid, they come in common dress and ask ‘How much’ like a customer and when we say ‘100 Rs’ they say ‘Come’ and take us to the police station” (Interview 44). Nevertheless, they

seem to feel more protected against the police than if working in other high client volume settings such as lodges:

*“Interviewer:* You don’t go to any lodge?

*Respondent:* No, we don’t want all that [complication], why get caught by the police?” (Interview 43)

This is mainly because the location of the *dhabas* offers them the possibility to flee from the police: “There is a field at the back and grass is piled, we hide there. There are trees all around... The moment the vehicle comes he [the *dhaba* owner] warns us to go, ‘Carry all your stuff and go’ he says” (Interview 43).

The *dhaba* owner usually tries to protect the women practising sex work in his *dhaba* from the police, *gundas* and clients:

*“Respondent:* [Police] come once in a month, the owner will know and will say ‘Don’t come’... Police and *gundas*, they take money from us and go.

*Interviewer:* *Dhaba* owner will be there?

*Respondent:* Yes, that’s why we are saved, otherwise they threaten.” (Interview 47)

Most of the clients that visit sex workers in *dhabas* are truck drivers: “Mostly only truck drivers” (Interview 27). Alcohol consumption is probably high in *dhabas*:

*“Interviewer:* Out of ten women doing in *dhaba* how many drink?

*Respondent:* All drink men and all women drink.

*Interviewer:* Is there anyone who doesn’t drink?

*Respondent:* Beer at least they drink. If you don’t drink, you can’t do at all. You don’t feel like doing it at all. How many you do, that you don’t keep count when you are drunk. Because you need to feel like that in order to do, so you have to drink, otherwise we are not able to do.” (Interview 44)

Other women practising sex work in *dhabas* claim they do not drink while entertaining clients:

“They [the clients] are drunk and if we are also drunk they may do without condom. We tell them about condom use, we give them and they put it on and all, but if we are intoxicated, then when we are lying below, they may remove or tear the tip, then what will we do? So we don’t drink while doing *dhande* [sex work]. If we are tired we go home, eat and drink and sleep, but not while working.” (Interview 27)

Nevertheless, the clients are most of the times under the influence of alcohol: “They will have drunk in the vehicle and come or they sit in the *dhaba* and drink. They don’t drink in the field” (Interview 27).

Condoms are provided free of charge by the programme: “We take [condoms] from the office and give to him [*dhaba* owner]” (Interview 43). If the *dhabas* are conveniently located peer educators visit the *dhabas* where women have sex work: “They [peer educators] come to the *dhaba* every Friday” (Interview 44). Moreover, the peer educators try to identify the women who practise sex work in *dhabas* and visit them in their own homes or other places:

“They [peer educators] come home and meet us.” (Interview 43)

“They meet us in the bus stand, they don’t come to the *dhaba*.” (Interview 47)

The women may visit the drop-in-centre and access the programme services more or less, depending on their timings of work; however, they are less prone to be regular visitors compared to other categories of female sex workers: “Sometimes we come [to the drop-in-centre] often, sometimes once a week” (Interviewer 43).

#### **7.1.12. Highway to highway female sex workers**

Highway to highway female sex workers can have a high client load, around “9-10” clients per day (Interview 29). However, some of the study participants soliciting and entertaining clients on highways only had a few clients per month: “4-5 in a month” (Interview 48). The women charge from Rs50 to Rs1000 per client, depending on the client, the type of sex and the amount of time the client wants to spend with the woman:

“Some give 50. Some give 150, some 200. If we become naked, they give 300 or even 350... I take even 1000. If the client is good, he books for two hours and sleeps with me two times and goes.” (Interview 29)

Moreover, “If I am with them only for one or two days then they give 1000, 2000 Rs” (Interview 48). In that case, the client takes her in the truck and she goes with him as long as he wants.

Most highway-based FSWs claim they use condoms consistently with their clients: “I won’t come [without condom] even if you give me 10000 Rs” (Interview 29). However, after much probing one participant admits that if the clients refuse condom use she agrees to have sex without condom:

*Interviewer:* Drivers, do they ask to do without condom?

*Respondent:* Yes, sometimes if they are like *gundas*, they ask.

*Interviewer:* And you do without condom?

*Respondent:* When we have taken money we have to do, isn’t it?... [If] I try to tell him and he still refuses to use, we do like that only [without condom] and come. What to do if he won’t use at all?” (Interview 48)

Highway-based FSWs have the freedom to choose their clients, as they practise sex work independently: “We see the client, then only we wave at it [truck]. Drunks and all we don’t wave at all... We know the trucks, we know the people well” (Interview 48). However, this depends on their financial need at the time: “It’s all in our hands, we decide... If we are not feeling well, then we may go and stand, but not do [have sex], just help friends. But if we need money then we have to do even if we have problem” (Interview 50).

Because they work on highways, the women are less concerned with police raids and harassment from *gundas*:

*Respondent:* I have never been caught [by the police]... I do like that only so that I don’t get caught. We go in dark, take someone...

*Interviewer:* Any problem from *gundas*?

*Respondent:* No, they know that we go, but no problem [from them].” (Interview 48)

However, if they stand on the highway in certain places that become well known, they may also have to hide from the police and *gundas*: “*Gundas* used to come there. They know that women are there. But now it’s become less, police and all used to come for some time. We

have to pay the *gundas*, otherwise it is not possible” (Interview 50). The greatest danger for the safety of highway-based FSWs comes from the clients, who can take advantage of being alone with the women and abuse them: “Some clients are troublesome. [They say] ‘I will give more money, do that, do this and all’” (Interview 29).

Truck drivers and their helpers make up the large majority of highway-based female sex workers’ clients: “Only truck drivers” (Interview 48). The women claim not to drink alcoholic beverages, but admit that most of the clients are drunk: “They drink and come, they [also] bring and drink... They drink and drive at times” (Interview 48). While most women say they manage to use condoms with their clients, one participant reported she sometimes has sex without using condom:

*Interviewer:* They use condoms when drunk?

*Respondent:* If they use they use, otherwise no.

*Interviewer:* You do without it [condom]?

*Respondent:* We do.” (Interview 48)

The women most of the times bring up the topic of condoms after they get into the truck and the men are aroused: “When we are about to do [sex] we tell them” (Interview 49).

Because they work on highways, it is difficult for the programme staff to contact sex workers where they solicit clients: “Peers don’t come there [on the highway]... Their duty is here only [in the office], they don’t come to the highway” (Interview 29). If they know where the women live, the peer educators try to visit them in their homes: “I meet the peer educators here [my house] only. Their houses are here only [nearby]” (Interview 29). Otherwise, whenever they have time the women visit the drop-in-centre and the programme clinic. However, highway-based female sex workers are usually less in contact with the programme staff: “No, [I don’t come to the drop-in-centre], I come only to the clinic... We go on trucks so I can’t come” (Interview 49).

### **7.1.13. Agriculture workers**

Agricultural workers who practise sex work have a low client volume, varying from a few clients per month to “2-3 in a week” (Interview 42): “I don’t do [sex work] every day, once in a week or a few times a month, whenever I can. I can’t [do it every day] because we have to go to work” (Interview 22). The women make between Rs100 to Rs500 per client and sex work is only a supplementary source of income:

“They give 100 or 200 or 150, like that only, within 200 Rs.” (Interview 23)

“[They give] 200 or 500 Rs, like that.” (Interview 22)

Most of the study participants claim to use condoms consistently with their clients:

“We tell them we won’t do [have sex] without condom” (Interview 41). However, it should be noted that women who are not in contact with the programme staff and their clients may not even know about condoms and HIV, which may result in unprotected sexual contacts:

“Women in the villages... go for work in the field to pick ground nuts or something, to get fuel and they do [sex work] in the fields and come back... They don’t know much about condom... They can’t spend [money on] bus charge and come [to the clinic]. And who will go and tell them that clinic will be held?” (Interview 28)

The women practise sex work independently and usually within the village and hence they have the freedom to choose their clients. Their reasons for sometimes refusing clients are the lack of time, being tired and boredom:

“If we are bored, means I am tired and I can’t do, then I don’t do. If I feel like it I do.” (Interview 41)

“If we don’t have time, we say no.” (Interview 42)

Agricultural labourers who practise sex work do not use intermediaries for their work. However, other women in the village sometimes provide them with clients; these women may also tell them about safe sex practices and may suggest that they use condoms with the clients: “There is this woman, she does this only [sex work]... If she knows

anyone [potential client] she tells me... She doesn't [take any money]... She tells me 'don't go without condom'" (Interview 41).

The women practise sex work very secretly and hence do not usually have any problems from the police or *gundas*: "If we are standing for this only [soliciting clients in the open] then they will come to know, but we go and come once in a while, they are there, we are here, how will they come to know?" (Interview 22). The clients are usually from the same village and hence may not harass the women. However, one participant mentioned one such incident and admitted that in such situations she does not use condoms:

*Interviewer*: If someone does anything like that, then you will do without condom?

*Respondent*: I feel scared, then what? What to do? Yes, I will do [without condom]." (Interview 22)

Many of the clients are agricultural workers, although some of them also have other occupations ("those doing agricultural work only" - Interview 23; "college students, drivers, construction workers" - Interview 41). The women claim not to drink alcohol and to refuse drunken clients:

"I don't go with drunk clients." (Interview 22)

"Some drink and come, some come here and drink." (Interview 42)

The women discuss condom use once they arrive at the place where they will be having sex: "We tell them about condom there where we go to do [have sex]" (Interview 22). Wherever the programme has outreach activities, the women can get condoms free of charge from them: "Madam [peer educator] comes and brings [condoms]" (Interview 22).

Study participants were in contact with the programme staff. However, it may be difficult for women to visit the drop-in-centres located in nearby towns:

"[We meet the peer educators] once in a week or once in a month... We are not at home at all. I go to work from morning to evening, so they meet us when we go to work." (Interview 23)

“I don’t go to the drop-in-centre, for treatment I go... She [peer educator] goes to work in fields, she hardly has time to meet.” (Interview 22)

“I go to the drop-in-centre once in a week, on Mondays. We have work.” (Interview 42)

This may affect women’s level of knowledge about HIV and their sexual behaviour. For example, one participant has been in contact with the programme for one year and did not know what HIV is (Interview 22).

## 7.2. Discussion

The findings of the qualitative study conducted in Belgaum district of Karnataka state indicate that women practising sex work in different settings experience different levels of HIV risk, as a result of vulnerability factors specific to each setting. Brothel to brothel, lodge to lodge, street to lodge, *dhaba* to *dhaba* and highway to highway sex workers seem to be at highest risk for HIV, but as a result of different vulnerability factors. Table 7.1 summarises the vulnerability factors specific to each sex work setting.

Table 7.1. Summary of vulnerability factors by type of sex work setting, qualitative component

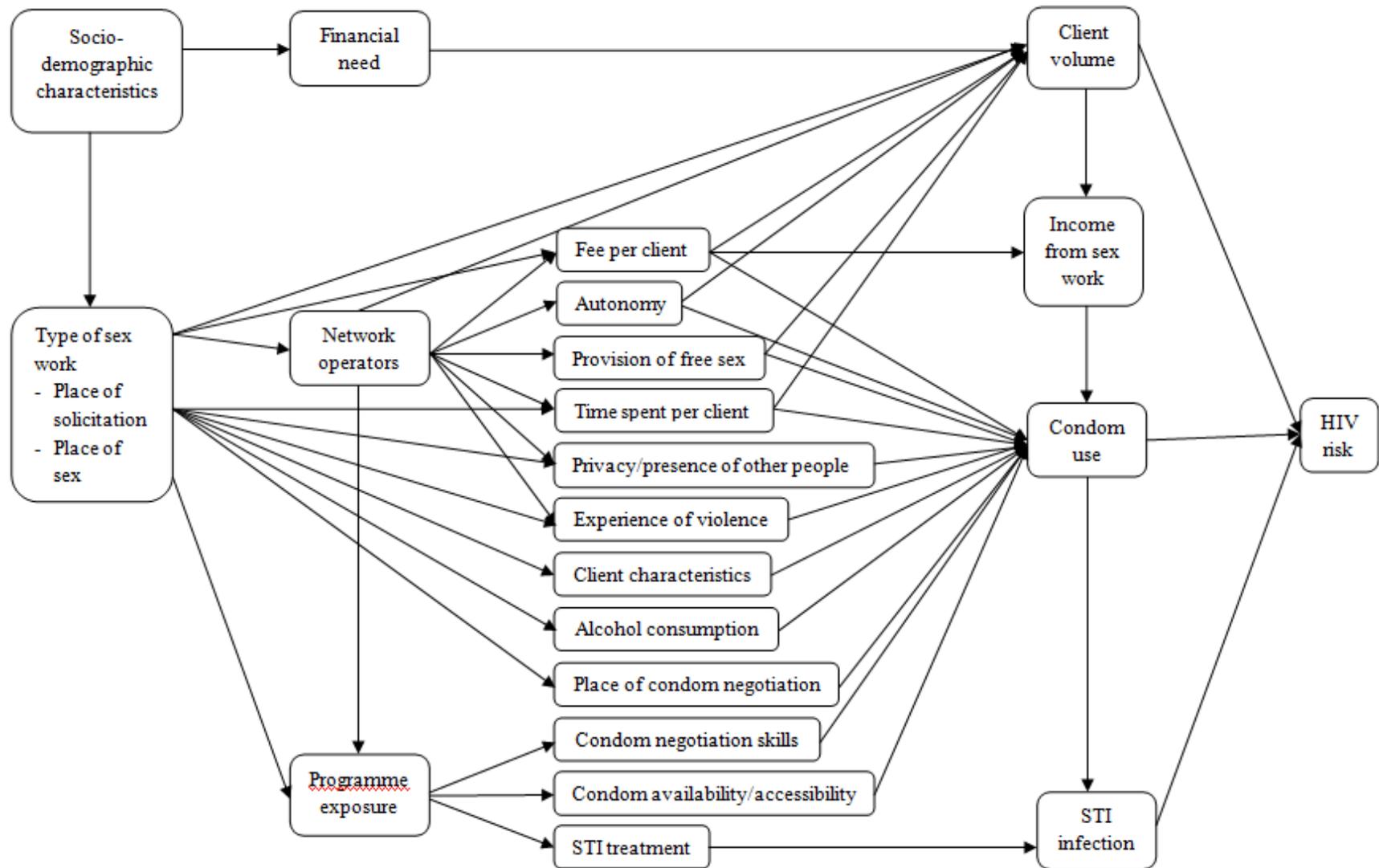
Sex work setting	Main vulnerability factors
Brothel to brothel FSWs	<ul style="list-style-type: none"> <li>- Have high client volume.</li> <li>- Their autonomy to choose clients is limited by the <i>gharwalis</i>.</li> <li>- May experience harassment and violence from the <i>gharwalis</i>.</li> <li>- Most clients have low-paid occupations and are less prone to use condoms.</li> <li>- There is high alcohol consumption*, especially during the night.</li> <li>- Their contact with the programme staff depends on the <i>gharwali</i>.</li> <li>- Do not regularly visit the drop-in-centres.</li> </ul>
Lodge to lodge FSWs	<ul style="list-style-type: none"> <li>- Have high client volume.</li> <li>- Their autonomy to choose clients is limited by the lodge manager.</li> <li>- There are a limited number of lodges available in a locality; hence, there is high pressure to stay in the lodge.</li> <li>- May need to provide free sex to the men working in/around the lodge.</li> <li>- Are vulnerable to police raids.</li> </ul>

Sex work setting	Main vulnerability factors
	<ul style="list-style-type: none"> <li>- Can spend little amount of time with the client.</li> <li>- Most clients are ‘professional’ clients of sex workers.</li> <li>- Usually need to buy condoms from the lodge manager.</li> <li>- Their contact with the programme staff depends on the lodge manager, who runs the lodge like a business.</li> <li>- There is little amount of time available for discussion with peer educators.</li> <li>- Tend not to visit the drop-in-centres.</li> </ul>
FSWs soliciting clients in public places (street-based)	<ul style="list-style-type: none"> <li>- Their autonomy to choose clients is limited by the competition between sex workers and the limited number of available clients.</li> <li>- May experience harassment and violence from <i>gundas</i> and members of the police.</li> <li>- May need to provide free sex to <i>gundas</i> and members of the police.</li> <li>- Most clients have low-paid occupations and are less prone to use condoms.</li> </ul>
<i>Vulnerability factors specific to the place of sex</i>	
Street to lodge FSWs:	
<ul style="list-style-type: none"> <li>- Have medium to high client volume.</li> <li>- Once in the lodge, their autonomy to refuse clients is limited by the lodge manager.</li> <li>- There are a limited number of lodges available in a locality; hence, there is high pressure to please the lodge manager.</li> <li>- May need to provide free sex to the men working in/around the lodge.</li> <li>- Can spend little amount of time with the client.</li> <li>- Are vulnerable to police raids.</li> </ul>	
Street to street FSWs:	
<ul style="list-style-type: none"> <li>- May experience harassment and violence from clients.</li> </ul>	
Street to home FSWs:	
<ul style="list-style-type: none"> <li>- May experience harassment from neighbours.</li> <li>- Are less prone to visit the drop-in-centres.</li> </ul>	
Home to home FSWs	<ul style="list-style-type: none"> <li>- Non-<i>Devadasis</i> may experience harassment from neighbours.</li> <li>- Non-<i>Devadasis</i> may practice sex work discretely; hence, they are difficult to identify by the programme.</li> <li>- Are less prone to visit the drop-in-centres and clinics.</li> </ul>
Phone-based FSWs	<ul style="list-style-type: none"> <li>- If the client is obtained through another sex worker, they have limited autonomy to refuse the client.</li> <li>- May experience harassment and violence from clients.</li> </ul>

Sex work setting	Main vulnerability factors
	<ul style="list-style-type: none"> <li>- If the place of sex is a lodge, they are vulnerable to police raids.</li> <li>- There is a higher expectation from clients, due to the higher rates practiced by the women.</li> <li>- There is high alcohol consumption among clients.</li> <li>- Are not covered by most programmes.</li> <li>- Are difficult to identify and be regularly contacted by the programme.</li> <li>- Are less willing to visit the drop-in-centres and clinics.</li> </ul>
Indirect-primary FSWs (parlour girls):	<ul style="list-style-type: none"> <li>- There is a higher expectation from clients, due to the higher rates practiced by the women.</li> <li>- There is high alcohol consumption among clients.</li> <li>- Are not covered by most programmes.</li> <li>- Are difficult to identify and be regularly contacted by the programme.</li> <li>- Are less willing to visit the drop-in-centres and clinics.</li> </ul>
<i>Dhaba to dhaba</i> FSWs	<ul style="list-style-type: none"> <li>- Have high client volume.</li> <li>- Their autonomy to choose clients is limited by the <i>dhaba</i> manager.</li> <li>- May need to provide free sex to the men working in/around the <i>dhaba</i>.</li> <li>- Most clients are truck drivers, known for their risky sexual behaviour.</li> <li>- There is high alcohol consumption among clients and FSWs.</li> <li>- Due to their location, they are difficult to identify and be regularly contacted by the programme.</li> <li>- Are less prone to visit the drop-in-centres and clinics.</li> </ul>
Highway to highway FSWs	<ul style="list-style-type: none"> <li>- Have high client volume.</li> <li>- May experience harassment and violence from clients.</li> <li>- Most clients are truck drivers, known for their risky sexual behaviour.</li> <li>- There is high alcohol consumption among clients.</li> <li>- Due to their location, they are difficult to identify and be regularly contacted by the programme.</li> <li>- Are less prone to visit the drop-in-centres and clinics.</li> </ul>
Indirect-secondary FSWs (agricultural/ construction workers):	<ul style="list-style-type: none"> <li>- Have little knowledge about HIV and safe sex.</li> <li>- Condoms are less available in the villages.</li> <li>- Are not covered by most programmes.</li> <li>- Due to their location and hidden sex work practice, they are difficult to identify and be regularly contacted by the programme.</li> <li>- Are less prone to visit the drop-in-centres and clinics.</li> </ul>

\* Alcohol consumption is one of the most important vulnerability factors affecting condom use. Clients and sex workers from all settings consume alcohol. However, in some settings, this might be particularly high.

Figure 7.1. Vulnerability factors linking the typology of female sex work with HIV risk



I summarize the vulnerability factors linking the typology of sex work with HIV risk using Figure 7.1, factors identified based on the findings of the qualitative study. Some of these factors have also been documented by previous studies among female sex workers in India, as indicated below. At the individual level, women's socio-demographic characteristics likely influence the place where they solicit and entertain clients (Dandona et al., 2006). The type of sex work they practise ultimately influences the number of clients they have, the extent to which they use condoms (Dandona et al., 2005; Halli et al., 2006), and whether they are exposed to STI (Ramesh et al., 2010).

Many FSWs decide the number of clients they entertain partly depending on the amount of money they need at the time, which is often a function of their family situation (Evans & Lambert, 2008). Similarly, if at times the women cannot earn the money they need, they may agree to have sex without using condoms in order to increase their income (Evans & Lambert, 2008). FSWs' autonomy is related to the levels of HIV risk women working in a particular setting are exposed to (Blankenship et al., 2008), as network operators have an important role in deciding the number of clients the FSWs need to entertain (Evans & Lambert, 2008). In addition, the presence and role of network operators affect the amount charged for a sexual encounter, whether they need to provide free sex and the amount of time they spend with a client (Evans & Lambert, 2008), which can influence the number of clients women entertain and their decision to use or not to use condoms (Blankenship et al., 2008). The network operators also impact the extent to which women can negotiate condoms in private or in the presence of other people. Different sex work settings attract different types of clients (Aubé-Maurice, 2009), with some settings more likely to attract clients who consume alcohol and/or are drunk. In some settings women are particularly vulnerable to harassment and violence from a variety of people (Panchanadeswaran et al., 2008). Both of these factors are likely to affect the extent to

which FSWs use condoms (Rodriguez et al., 2010; Panchanadeswaran et al., 2008). The place where the women negotiate condom use with clients varies according to the type of sex work they practise. The places of client solicitation and sex and the presence of network operators affect the extent to which FSWs are exposed to HIV prevention programmes and are able to access services (Ramesh et al., 2010), which influences the level of condom availability and women's condom negotiation skills, and ultimately condom use (Reza-Paul et al., 2008). FSWs that attend the programme clinics regularly and take the prescribed syndromic management/ presumptive treatment tend to have fewer STI infections, which may reduce their risk for HIV.

As shown in the previous section, study participants provided information about their level of exposure to the HIV prevention programme and access of its services. In addition, it should be taken into account that certain sex work settings are more or less accessible for outreach, which affects FSWs' level of exposure to the programme. This issue is discussed in detail below, for each sex work setting.

Street-based FSWs are the most easily accessible to programme staff, as they can be found in public places and also in the places where they entertain their clients. Diametrically opposed is the situation of FSWs working in *dhabas* and on highways; unless the *dhabas* are located in the proximity of the cities/ towns/ villages covered by the programme, it is very difficult for outreach staff to identify and/or maintain regular contact with the women working in these settings.

Brothel to brothel FSWs are easily accessible for outreach activities, because the location of the brothels is well known within the locality and the women stay in the brothel on a permanent basis. However, the programme staff can interact with the sex workers depending on the attitude of the *gharwali* towards safe sex and HIV prevention programmes. Within the study district, the women working in brothels have been accessing

services for many years. From an outreach perspective, the peer educators find it easy to visit the women and talk to them, although the *gharwali* might be present during those interactions.

As in the case of brothels, the peer educators do not have a problem locating lodges where sex work takes place. However, their access to the women working there (i.e. lodge to lodge FSWs) depends largely on the willingness of the lodge owner and/or manager to collaborate with the programme staff. While the peer educators visit the lodges regularly, the FSWs do not have a lot of time at their disposal to talk to the peer educators. Moreover, as reported by study participants working in lodges, the women often have to buy from the lodge manager the condoms made available free of charge by the programme. On one hand, the fact that the lodge profits from condom use is an incentive for them to insist that the women use condoms with their clients, which may ultimately result in higher condom use. On the other hand, it is unfortunate that FSWs need to pay for condoms provided free of charge to the lodge.

Many home to home FSWs are in contact with peer educators and outreach workers, who know the location of their houses. However, if the programme staff is not aware that the woman is practising sex work, the peer educator cannot supply her with condoms. Many FSWs may be particularly concerned with maintaining a low profile and keeping their activities secret and hence home-based FSWs may be less covered by the programme activities. In case the peer educators do not know that the women practise sex work, the women may not access any of the services offered by the programme.

Because most of the time phone-based female sex workers initiate other women into sex work and get clients for them, it is important that they explain to the new 'recruits' how to use condoms and why. Phone-based FSWs may not be well covered by HIV prevention programmes, so hopefully the women discuss these issues among themselves. In case the

programme staff is aware of the lodges or houses where phone-based female sex workers entertain their clients, they can supply condoms for free to these places. Otherwise, if the women want to practise safe sex, they need to purchase condoms from pharmacies. In the study district, efforts have been made to train peer educators who are part of the phone-based sex work network, so that they promote safe sex among this group of sex workers and get them to access the services offered by the programme. However, there are not many places where phone-based FSWs are being reached. Moreover, given their concern for anonymity, the women are less willing to visit the drop-in-centre regularly.

Parlour girls are particularly discrete about their work and hence they are very reluctant to identify themselves as sex workers, get in touch with programme staff, access services and meet other sex workers. To date, little effort has been made to reach these sex workers by programmes, either in the study district or elsewhere in Karnataka. This is partly because the women are very difficult to identify, have a low client volume and are expected to be educated enough to practise safe sex.

There seems to be an increase the involvement in sex work of agricultural workers, which should be acknowledged by the HIV programme. There are very few places where efforts have been made to reach agricultural workers who practise sex work. In the study district some work has been done in this direction and hence the study participants were in contact with the programme staff. However, it may be difficult for women to visit the drop-in-centres located in nearby towns. Agriculture workers tend to practise sex work very discretely and are spread out in small villages, which makes their coverage very problematic. Moreover, there are usually no pharmacies in villages, so women who are informed and want to practise safe sex cannot buy condoms. Condom availability is a problem in villages that needs to be taken into account.

The findings show that FSWs working without the help of network operators (e.g. street-based, highway-based) have more autonomy in choosing their clients compared to FSWs working in controlled settings. However, especially in the case of FSWs soliciting clients in public places, they may not always have the luxury to exercise this freedom to choose clients, because they may not have many clients to choose from. Among street-based female sex workers, street to lodge FSWs are of particular importance, given their high HIV and STI prevalence, as shown in Chapter 4. Street to lodge study participants claim that if the clients refuse to use condoms, they ask them to pay the room rent and leave without having sex with them. However, it is difficult to believe that any client would agree to pay money if he had not have sex with the woman. At the same time, the lodge manager would not agree to the client leaving without paying for the room rent. Hence, even if the women find their own clients and have a straightforward agreement with the lodge managers, the lodge managers may still be able to influence the women's decision to use condoms or not with their clients. Moreover, in any locality/area there are only a limited number of lodges where women can entertain their clients and hence they need to maintain good relations with the lodge managers.

This is in contrast to the situation of the street to rented room FSWs, who seem not to have many problems from their clients. This is mainly because they take the clients to rooms rented by old female sex workers in houses located in 'normal' neighbourhoods. The clients are somehow 'forced' by the circumstances to 'behave,' as they are usually instructed by the sex worker that they are supposed to be quiet and not draw too much attention to themselves. This becomes an advantage for the sex worker, as the client is brought into an environment where she is familiar and he needs to obey to her 'rules.'

The analysis conducted in chapter 4 using IBBA survey data indicate that brothel to brothel and street to lodge FSWs are at highest risk for HIV in Karnataka. The qualitative

data suggest a more complex and nuanced picture, as quantitative studies tend to miss out on contextualization (Scambler & Paoli, 2008). It seems, for example that the influence of network operators can be critical: the number and types of clients, the degree of autonomy, the extent of condom use, and access to programmes can all vary from brothel to brothel, lodge to lodge, *dabha* to *dabha*, and so on. Similarly, highway-based FSWs can be at risk depending on the nature and degree of isolation of their location, local policing policy and personnel, and the rate of truck drivers' predilection for anal sex.

### **7.3. Limitations**

The limitations discussed in the previous chapter (section 6.3) also apply to the results discussed in the present chapter, as they are based on the data from the same qualitative study. In addition, I discuss a few more issues that should be taken into account in the interpretation of the findings.

Information about the socio-demographic profile of the qualitative study participants was collected; however, given the limited number of interviews, it would not be appropriate to generalize the findings and these data were not discussed. Information about the rates sex workers charge per client and the number of clients they entertain was collected as part of the IBBA. Table 7.2 summarises these findings, for the sex worker population from Belgaum district that was included in the IBBA. Information about these indicators was also collected during the interviews and those data are presented, which is particularly useful for the seven sex work settings not represented in the IBBA.

Alcohol consumption may be an important vulnerability factor, as shown in section 7.1. However, in India there is strong stigma against alcohol consumption, especially among women. Hence, it is not surprising to see that women working in most sex work settings were reluctant to admit that they drink alcohol beverages. Whenever the

participants reported alcohol consumption, this was mentioned in the appropriate subsection.

Table 7.2. Client volume and amount charged per sex act by typology, IBBA data, Belgaum district

	Brothel to brothel	Home to home	Street to home	Street to rented room	Street to lodge	Street to street	Other
Mean monthly client volume	81.0	46.9	60.3	60.3	64.4	42.5	57.9
Mean amount charged per sex act	71.3	80.8	70.6	69.5	108.4	86.2	90.5
Total N	96	118	37	15	58	38	24

Most participants reported that they knew about the HIV programme and accessed services regularly. However, it should be noted that most women were recruited into the study with the help of peer educators working for the local NGO implementing the HIV programme, which introduces a possible bias.

Most participants also reported using condoms consistently. An extensive HIV prevention programme has been underway in the study district and hence it is possible that the reported condom use is indicative of actual behavioural change. At the same time, one cannot ignore the strong social desirability bias for reporting consistent condom use among sex workers who have been in contact with the programme. This applies to most categories of female sex workers covered in the qualitative study. Whenever participants admitted to not using condoms consistently, this was mentioned in the discussion of the respective type of sex work.

The status of having or not having an STI infection could not be ascertained, lacking biological data. Hence, while STI infection is conceptually an important risk factor, data were only collected on client volume, condom use and other factors that affect these indicators. No discussion about the extent of STI treatment is included.

## **Chapter 8. Conclusion**

The last chapter summarizes the main findings of the thesis (section 8.1), its main limitations (section 8.2) and implications for the HIV programme (section 8.3) and future research on sex work in India (section 8.4). The chapter ends with some concluding remarks (section 8.5).

### **8.1. Summary of findings**

The thesis is premised on the fact that the National AIDS Control Organization employs the typology of female sex work in outreach and other components of the HIV programme in order to identify high-risk female sex workers. However, the current typology – distinguishing between female sex workers based on their main place of solicitation – may not adequately reflect the variation in HIV risk. The thesis explores the possibility of expanding the NACO typology to take account of other HIV risk factors that indicate which women are at particularly high HIV risk.

First, I conducted a review of the literature on female sex work in India in order to identify the typologies that have been employed at a national, state or city level. The review showed that in addition to the main place of client solicitation (criterion recommended by NACO), other criteria (i.e. place of sex, fee per sex contact, labour relation with the brothel owner/manager) have also been proposed to discriminate between categories of FSWs. While the main places of solicitation of FSWs can be identified through mapping, the other criteria represent information that can be obtained from the FSWs themselves and hence require direct contact with the women. In addition, I conducted a review of the literature on female sex work in India in order to identify the risk factors of HIV and STI infection and

inconsistent condom use documented in the literature. Together, these reviews informed me regarding possible risk factors of HIV risk to consider during my subsequent quantitative analysis.

The review of the typologies of female sex work in India also showed that most typologies have been developed based on mapping of FSWs, ethnographic observations of the female sex work industry and/or FSWs' reports of how the industry is organized. As I was intending to use quantitative data and none of the previous studies had developed typologies of female sex work in India using quantitative data, I reviewed various methods to develop typologies, from theoretical *a priori* typologies to empirical typologies.

I proposed a method for devising evidence-based typologies of sex work which prioritizes place of solicitation and explores which other factors are helpful for targeted interventions by indicating which FSWs are at high risk. Firstly, I examined other criteria that have been proposed to discriminate between categories of FSWs and documented risk factors for HIV and STI infection and inconsistent condom use. Secondly, I identified the risk factors of HIV and STI prevalence respectively using multivariate models. Thirdly, I constructed typologies which distinguish between FSWs based on their main place of solicitation and the strongest predictor of HIV and STI status, and then collapsed the resulting categories of FSWs into high, medium and low risk groups. The suggested method has been applied using IBBA data from Karnataka, Tamil Nadu and Andhra Pradesh states.

The analysis suggests that the typology of female sex work in Karnataka should distinguish between women based on the main place of solicitation and the main place of sex. The revised typology identifies two categories of female sex workers at high lifetime HIV risk, namely street to lodge and brothel to brothel FSWs. Street to lodge FSWs also have the most risky recent sexual behaviour, as indicated by their STI prevalence. While

the information about place of sex can be obtained from the FSWs themselves, the criterion has the advantage of being linked to a geographical location, making it relatively useful for outreach activities.

While in Karnataka FSWs have a significantly different risk level depending on their main place of sex, this does not apply in Andhra Pradesh, where the risk for HIV and STI infection of FSWs varies by their marital status. Depending on their HIV prevalence, previously married home-based FSWs are at high risk and previously married and unmarried brothel and street-based FSWs are at medium risk. In terms of the recent risky behaviour, FSWs soliciting clients in other places than their homes, brothels and public places are at high risk, while unmarried FSWs soliciting clients in brothels or public places and previously married FSWs soliciting in homes or public places are at medium risk. While Indian women's marital status can generally be assumed based on visual indicators, such assessments would often be erroneous among female sex workers. Moreover, information about FSWs' marital status is not linked to a geographical location and would most likely need to be obtained from the women themselves, making typologies incorporating this information of limited utility for outreach. Of note, the analysis also indicates that Andhra Pradesh female sex workers have similar HIV and STI infection rates regardless of their main places of solicitation, suggesting that the current NACO typology is not useful for identifying high-risk FSWs although it obviously provides a picture of where women work in a given location.

FSWs from Tamil Nadu have a different HIV prevalence depending on their marital status; however the strongest predictor of STI prevalence among this population is alcohol consumption. Previously married street-based FSWs have high lifetime HIV risk and unmarried or married street-based and previously married home-based FSWs are at medium risk. In terms of recent risky behaviour, as indicated by the STI prevalence, street

high alcohol and home low alcohol FSWs are at high risk, and street low alcohol FSWs are at medium risk. While a typology classifying female sex workers from Tamil Nadu by their main place of solicitation and marital status would indicate which FSWs are HIV positive, as explained in the previous paragraph it probably has limited applicability for outreach. Alcohol consumption is to a limited extent linked to geographical locations (e.g. drinking venues, places of solicitation associated with alcohol consumption) and on a case by case basis can sometimes be assessed visually (i.e. FSWs obviously drunk). Hence, typologies incorporating alcohol consumption would be relatively useful for outreach activities. Of note, Tamil Nadu FSWs have similar STI rates across sex work settings, making alcohol consumption the only indicator significantly associated with recent risky sexual behaviour. These findings underscore the association between alcohol consumption and HIV risk and the importance of linking HIV and alcohol interventions among female sex workers.

Female sex workers from Karnataka have been classified by the main place of sex (Blanchard et al., 2005) or the main place of solicitation (Isac et al., 2007; Karnataka Health Promotion Trust, 2005). Other researchers have taken both variables into account when building their multivariate models (Reza-Paul et al., 2008). The findings of this analysis suggest that the typology of sex work should be operationalized by a variable derived based on both the place of solicitation and the place of sex. This has implications for the identification of the high risk categories of FSWs in Karnataka. The analysis conducted for this thesis suggests that brothel to brothel and street to lodge FSWs are at highest risk in Karnataka, unlike previous studies which only identified brothel-based FSWs as a high risk group (Ramesh et al., 2006). A study employing a similar operationalization of the typology of sex work found that street to lodge FSWs were at highest risk for syphilis in Karnataka (Mishra et al., 2009).

In Andhra Pradesh, researchers have been using two main female sex work typologies. Rakhi Dandona and his team have classified FSWs based on the main place of solicitation (criterion implied) and have identified three groups of sex workers: street-based, home-based and brothel-based (Dandona et al., 2005a; 2005b; 2006; Frontiers Prevention Project, 2006; Kumar et al., 2006). Another group of researchers have distinguished (based on a non-specified criterion) between the following categories of sex workers: brothel only, street only, lodge/hotel only, home only, highway only, agricultural only, and multiple types (Blankenship et al., 2007a; 2007b; Dhopeswarkar, 2007; Hanck, 2006; 2007; Project Parivartan, 2007; West & Irwin, 2007; West et al., 2007). The analysis conducted in this thesis suggests an extension of the typology used by the Dandona team, as in addition to classifying FSWs based on their place of solicitation it distinguishes FSWs based on their marital status; however this typology has limited outreach applicability.

Researchers working in Tamil Nadu have documented street-based, brothel-based, 'family girls' or 'housewives' (also called apartment or house-based), and mobile FSWs (also called call girls) (Asthana & Oostvogels, 1996; Kumar, 2003). In addition to these categories, Amin (2004) also mentioned highway-based FSWs. More collapsed typologies have been employed by Velu et al. (2003) (street-based, brothel-based and discreet FSWs) and Panchanadeswaran et al. (2008) (street-based and brothel-based FSWs). The analysis conducted in this thesis suggests typologies which expand the street-based and home-based groups of female sex workers proposed by previous studies; however, while a typology incorporating alcohol consumption has some potential for outreach, one including marital status is less useful programmatically. Marital status was shown to be a significant risk factor of HIV prevalence in some previous studies (Brahme et al., 2006; Mishra et al., 2009; Ramesh et al., 2008). Alcohol consumption was shown to be an important

vulnerability factor among female sex workers based on studies using qualitative data (Panchanadeswaran et al., 2008; Rodríguez et al., 2010).

In addition to the quantitative analysis of the IBBA surveys among female sex workers from three states, a qualitative study was conducted in Belgaum district of Karnataka state in order to understand the mode of operation of the sex work settings identified in the district and the vulnerability factors which can explain why certain categories of sex workers are at higher risk for HIV compared to others. Female sex workers were categorised using the typology identified based on the quantitative analysis i.e. classification based on the main place of solicitation and the main place of sex.

Based on information from programmers working in the district, thirteen different types of female sex workers were documented in Belgaum, namely brothel to brothel, lodge to lodge, street to brothel, street to lodge, street to street, street to rented room, street to home, home to home, phone-based, parlour girls, *dhaba* to *dhaba*, highway to highway, and agricultural workers. These categories of FSWs operate in different ways and have a varying degree of autonomy, largely depending on the presence and role of the network operators they deal with. While other studies have been conducted among female sex workers in Belgaum district (Orchard, 2007; O'Neil et al., 2004), they did not focus on Belgaum district or on understanding the overall sex work industry in the district.

The study made a first attempt to examine the issue of the mobility between sex work settings in India and showed that while some of the study participants had practised sex work in a number of settings, many did not. I also identified the main patterns of movements between sex work settings, as reflected in the data.

The qualitative study also suggests that women practising sex work in different settings experience different levels of HIV risk, as a result of vulnerability factors specific to each setting. Brothel to brothel, lodge to lodge, street to lodge, *dhaba* to *dhaba* and

highway to highway sex workers seem to be at highest risk for HIV, but as a result of different vulnerability factors. Condom use is shown to be the result of a complex decision-making process influenced by a multitude of factors, such as: the rate charged per client, the woman's level of autonomy, the presence and role of network operators, the amount of time spent with the client, the experience of violence and forced sex, the socio-demographic and economic profile of the client, the woman and client's alcohol consumption, the place of condom negotiation, the level of exposure to HIV prevention programmes and access of their services, the availability of condoms, and the condom negotiation skills.

Previous studies have documented some of the factors influencing condom use. Condom use has been shown to vary depending on sex workers' demographic characteristics (Dandona et al., 2005) and level of participation in FSW support groups (Dandona et al., 2005; Halli et al., 2006), and clients' alcohol consumption (Madhivanan et al., 2005). Dandona et al. (2005) showed, based on sex workers' reports, that clients who did not use condoms were more likely to be middle-aged or old, married and with lower economic status. Blankenship et al. (2008) examined quantitatively the role of autonomy in safe sex practices; economic dependence and control over the type of sex and the amount charged were associated with consistent condom use. Evans and Lambert (2008) showed using qualitative data that safe sex is the result of complex negotiations between various actors and that sex workers make decisions about condom use by taking into account health-related risks, but also economic, personal and emotional risks. The qualitative study conducted for this thesis examined the role of these and other factors in condom use and identified vulnerability factors specific to each sex work setting.

## **8.2. Limitations of the study**

I discussed the limitations specific to each results chapter throughout the thesis. In addition to the issues already mentioned, a number of other limitations should also be taken into account when interpreting the results of the study.

As explained previously, my interest in the typology of female sex work stemmed from the role it plays in HIV programming among FSWs, in terms of outreach and other components of the programme. According to India's National AIDS Control Organization, the typology is expected to be outreach-appropriate; this explains the fact that the current typology distinguishes FSWs based on their main place of solicitation, as it represents the only information about FSWs that can be obtained through mapping, without direct contact with the women. In addition, NACO employs the typology in order to identify high-risk FSWs for targeted interventions. The method proposed in this thesis attempts to help with this by devising typologies of sex work which, in addition to the main place of solicitation, incorporate the strongest risk factor of HIV and STI prevalence respectively. However, the risk factors identified in this analysis (i.e. Karnataka – place of sex, Andhra Pradesh – marital status, Tamil Nadu – marital status and alcohol consumption) vary in their level of applicability for outreach. The place of sex can be linked to geographical locations, but on an individual basis would need to be obtained from the FSWs themselves. Alcohol consumption can to a certain extent be linked to drinking venues and possibly to places of solicitation where this behaviour is prevalent; moreover, FSWs who are intoxicated while working can be identified where they solicit clients. However, marital status has little potential for outreach, as it cannot be linked to geographical locations and information about it would most probably need to be obtained from the women themselves. Overall, all the proposed typologies are more complex from an outreach point of view than the NACO typology, which needs to be acknowledged from a programmatic perspective.

Moreover, while in this thesis I examined the typology of female sex work within the context of the HIV epidemic and programme in India, it should be acknowledged that some might propose typologies of sex with other goals in mind. For example, researchers of sex work might be interested in proposing typologies which capture the complexity of the sex work industry as accurately as possible. In this case, the extent to which the typology captures the variation in risk between female sex workers may not be relevant. Instead, they may propose typologies consisting of non-mutually exclusive categories and elaborate on the relationship with the network operators, timing of work, or other aspect of the work.

The qualitative study was conducted in order to complement the quantitative study. More specifically, the qualitative data were expected to provide insights regarding the mode of operation and vulnerability factors of the sex work settings in Belgaum district. The categories of FSWs examined in the qualitative study were set prior to conducting the in-depth interviews and were classified using the typology identified in Chapter 4, based on the quantitative analysis of the IBBA survey among FSWs from Karnataka. This was deemed appropriate given the objectives of the study. However, an ethnographic study focused on developing a typology of sex work might have decided the categories of FSWs based on the collected data, rather than *a priori*. Such a study might have also employed other research methods (e.g. observation, interviews with key informants) in addition to in-depth interviews with FSWs.

### **8.3. Implications for HIV programming**

The findings of the study have been shared with programmers from Karnataka Health Promotion Trust (KHPT) and Belgaum Integrated Rural Development Society (BIRDS) –

the local NGOs in Karnataka state and Belgaum district respectively – through two dissemination meetings<sup>17</sup>.

The first dissemination meeting took place on July 17<sup>th</sup> 2009 in Bangalore, at KHPT headquarters. KHPT directors and programme deputy directors working in various regions throughout Karnataka participated in the meeting. A summary of the main findings was circulated prior to the meeting. In addition, I made a presentation of the results of the quantitative and qualitative studies, as related to Karnataka. For the dissemination meeting participants, it was most important to find out that the street to lodge FSWs are at high risk in Karnataka in terms of both HIV and STI prevalence. Programmers acknowledged that the lodges represent a setting that is not thoroughly understood and appropriately reached at the moment, which affects programming among lodge to lodge and street to lodge FSWs, both categories of sex workers which are at high risk for HIV infection. It was believed that it is important to distinguish street-based FSWs by their main place of sex and this needs to be taken into account in future outreach efforts by targeting the places where FSWs entertain clients and the network operators specific to each setting. Given the difference in the mode of operation of FSWs across settings, it was acknowledged that outreach strategies specific to each sex work setting need to be developed in the future. Drawing on the findings of the qualitative study, it was believed that it may be important to work more with the network operators and the wider power structures affecting the sex work industry. The vulnerability factors linking the typology of sex work with HIV risk (summarized in Figure 7.1) and the issue of mobility of sex workers between settings also created some discussion.

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<sup>17</sup> As explained previously, the quantitative component of this thesis has been revised substantially following the examiners' comments during the *viva*. The dissemination meetings took place prior to the *viva* and hence the shared findings were based on the initial analysis. However, the dissemination meetings focused on the findings related to Karnataka state and Belgaum district, and the main conclusions of the quantitative analysis pertaining to Karnataka remained the same after the revisions.

A second dissemination meeting took place in Belgaum on July 29<sup>th</sup> 2009. Representatives of KHPT Belgaum, BIRDS and the local sex workers' collectives from three districts in Northern Karnataka (including Belgaum) participated in the meeting. I made a presentation of the results of the quantitative and qualitative studies, as related to Belgaum district. The field team found the results very useful, in that they clarified misconceptions about the typology of sex work, the way sex work operates and the high risk groups in Belgaum district. The programme staff seems to now have a renewed focus on network operators. A new mapping of the lodges where sex work takes place was planned to be conducted throughout the district. Moreover, an attempt will be made to better understand the 'other' category, which includes the more 'invisible' and difficult to reach types of sex workers, many of which are at high risk for HIV infection, such as highway to highway and *dhaba to dhaba* FSWs.

These changes are expected to have a significant impact to the understanding of sex work industry in Belgaum district and the intervention programme. As mentioned in Chapter 3, it is estimated that there are 5057 female sex workers in Belgaum district who solicit most of their clients in public places, representing more than half of the total number of estimated sex workers. I have shown that there is variation in the HIV risk experienced by women practising sex work in public places depending on their main places of sex. In other words, this group of over 5000 sex workers is much more heterogeneous than initially believed. In addition, almost 2500 sex workers have been allocated to the 'other' category. While this represents over a quarter of the total number of sex workers, it is probably still an underestimate; some of these types of sex workers are difficult to identify during mapping exercises, as they practise sex work secretly. Moreover, it consists of categories of sex workers who practise sex work in very different ways and who are at different risk for HIV infection.

To sum up, the findings of the study which pertain to Karnataka have been shared with the local programme teams (both the managerial team and the field staff). The finding of the present study that street to lodge FSWs are a high risk group in Karnataka is expected to make programmers working in the state intensify their efforts among this group and develop outreach strategies specifically targeting these sex workers. For instance, peer educators and outreach workers could contact street to lodge FSWs both in public places and lodges. It would be helpful for the programme staff to liaise with the lodge managers and room boys in order to create an enabling environment for safe sex in this setting. An example of a lodge-specific outreach strategy was evaluated by a study conducted in Nicaragua, which showed that condoms placed in rooms or handed to clients were more likely to be used than if made available at reception (Egger et al., 2000). Attempts will also be made to develop outreach strategies specific to each sex work setting existing in Karnataka. For example, while the peer educator system is effective in maintaining regular contact with certain types of FSWs, such as street-based and brothel-based FSWs, it is less effective in keeping in touch with highway-based and *dhaba*-based FSWs; the latter categories of FSWs may be better reached using mobile units.

Based on discussions with programmers working in KHPT, it appears that the HIV programme among sex workers in Karnataka will be increasingly focused on new entrants into sex work (i.e. women who have 2 years or less in sex work) and young sex workers (i.e. who are less than 25 years old). This is mainly because it has been noticed that most HIV infections among female sex workers occur in their first few months or years of practice, when most of them are very young (Sarkar et al., 2006). Brothel-based FSWs are young, but they have also been in sex work for longer periods of time. On the contrary, street to lodge FSWs are more commonly young sex workers and new entrants into sex work. Almost half of street to lodge and street to rented room FSWs have been in sex work

for 2 years or less, making them at high risk for contracting HIV. This represents yet another reason for the HIV programme in Karnataka to intensify their efforts among street to lodge FSWs.

Overall, I recommend that local typologies of female sex work are nested within the national framework and incorporate the risk factors specific to the respective population of female sex workers, especially when these risk factors have potential utility for outreach activities. The proposed method for devising evidence-based typologies of female sex work represents a possible tool to accomplish this goal.

#### **8.4. Implications for future research**

At least in some states in India, quantitative data about the female sex worker population are available. Researchers and programmers working on female sex work in India and elsewhere can use the proposed method in order to assess whether their current typology is the most appropriate classification of sex workers and to develop evidence-based typologies of sex work.

For the purpose of this study, I employed IBBA data from Karnataka, Andhra Pradesh and Tamil Nadu, which were collected between 2004 and 2006. Other types of female sex work may have emerged in the meantime. The sex work industry is extremely fluid and in a state of continuous flux; hotspots in most cities in India either gain or lose in numbers every year. Moreover, the ways in which FSWs operate are continuously changing and evolving in response to legal and contextual factors. Hence, these analyses should be replicated using data from later IBBA rounds, in order to ensure that the typologies continue to discriminate between women at different risk.

It would be extremely useful if future surveys among female sex workers in India include questions about the mode of operation of the sex work industry and various

vulnerability factors. While these issues have been explored during the qualitative component of this study, there is a need to have quantitative data.

An attempt was made in this study to understand the mobility of sex workers between settings. This has important implications for the HIV transmission dynamics, as it connects otherwise isolated sexual networks and hence may contribute to the spread of HIV infection. It also affects the way we interpret HIV prevalence data, in the sense that because sex workers move between settings it cannot be assessed where the infection took place and hence other indicators need to be taken into account. Quantitative data on the mobility of sex workers between settings would be extremely useful in clarifying these issues.

### **8.5. Concluding remarks**

The thesis represents an attempt to study the typology of female sex work in India in the context of the HIV programme. I proposed a method for devising evidence-based typologies of sex work in India which describe the variation in HIV risk and, where possible, are outreach appropriate i.e. can be employed to locate and identify high-risk female sex workers. I applied the method to IBBA data among FSWs from three states in south India. Qualitative data provided an understanding of the factors explaining the variation in HIV risk across sex workers from Karnataka. It also helped identify high risk groups of sex workers additional to the ones observed when applying the method using IBBA data.

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## **Appendix A: Interview guide for the qualitative study**

### **In-depth interview guide**

Record the date and place of the interview.

1. Socio-demographic characteristics: Record the age, marital status, number of children, religion, caste, literacy, education, age at entry into sex work and duration of sex work.
2. Sex work setting: What are all the places where you solicit clients? Please describe the details of how you solicit clients. What is the most common place where you solicit clients? Why do you solicit clients in these places? What are all the places where you take your clients for sex? What is the main place where you entertain clients? Why do you have sex in these places? Who chooses the place of sex, you or the client? If and when you choose the place, where do you go and why? If and when the client chooses the place, where does he take you and why? Since you started sex work, have you always practiced sex work in these places? If no, what are the other places where you solicited or entertained clients? Do you solicit clients with the help of any agent/broker/brothel madam? If yes, out of 10 clients how many do you solicit with the help of the agent/broker/brothel madam? What is your agreement with him/her? What is the agreement you have with the person who manages the place where you have sex? How easy can you change the place where you practice sex work if you wish? How easy can you stop working with your broker/agent/brothel madam if you wish?
3. Client volume: How many days per week do you actively practice sex work (have clients)? How many clients do you have in one day on an average? In which places of solicitation do you have more clients? Why? How much do you generally charge for each sexual encounter? How much money do you make from sex work per month?
4. Characteristics of clients: What type of clients do you generally have? What are their ages, marital status and occupations? Do you have different types of clients depending on where you solicit clients? To what extent do you choose your clients? Do you sometimes want to refuse a certain client? Why? Can you refuse a client who wants to have sex with you?
5. Condom use: Out of 10 clients, how many clients bring condoms themselves or initiate condom use? Out of 10 clients, how many clients agree to use condoms? Which clients are less willing to use condoms, in terms of their age, marital status and occupation? How many such clients do you have out of 10 clients? What are the reasons why some clients refuse to use condoms? In these situations, do you try to convince your clients to use condoms? Do you discuss condom use with clients when soliciting clients or at the place of sex? Which do you find easier? Why? If you negotiate condom use at the place of solicitation, from all the places where you solicit clients, where do you find it easier to negotiate condom use with clients? Why? If you negotiate condom use at the place of sex, from all the places where you have sex with clients, where do you find it easier to negotiate condom use with clients? Why? Compare any places where you have ever solicited or had sex. Do you have a regular partner? If yes, do you use condoms when having sex with him? Why or why not?

6. Privacy and presence of other people: How much privacy do you have in the places where you solicit or have sex? Is the presence of other people an advantage when you negotiate condoms or not? Which people does it help to have around from the point of view of condom negotiation? If you have an agent/broker/brothel madam, what is his/her opinion about condoms? Does s/he encourages or discourages you to use condoms with clients? Does s/he influence you in any way in this regard? How? Are there condoms available in the places where you have sex with clients? If yes, are they available free or for sale?
7. Alcohol consumption: Do clients tend to drink alcohol before or during sex? Are clients more inclined to drink alcohol in certain places of sex than in others? If yes, please specify which. Do they ask you to drink as well? If they do, what do you do? Does this in any way affect your ability to negotiate condoms? Does this in any way affect the client's ability and willingness to use condoms?
8. Experience of violence: Have you experienced violence from the people around you? How often does this happen? What types of violence are you confronted with and from whom? How common is this for the women working in the same places as you?
9. Self-perceived risk: As you know, women practice sex work in a variety of places, such as brothels, public places, their own homes, rented places and other. Compared to women who work in other settings, do you feel that you are at higher or lower risk for contracting STIs/HIV? Why? What are some of the risks that you have to face when doing sex work in the current place? In your opinion, women working in which settings are at higher or lower risk and why?
10. Program exposure and access to services: Do you know of the local NGO (use appropriate name) which provides services for women like you? What is your general opinion about them? Do you access services from them? Which services do you access and how often? Do you go to the NGO/collective office or drop-in-centre? If yes, how often do you go? Do peer educators from the NGO/collective meet you in other places? Where? Do they meet you at the places where you solicit clients? If no, why don't they? Do they meet you at the places where you have sex? If no, why don't they? Do you go to the NGO/collective office or drop-in-centre more or less depending on where you practice sex work? Why? Do peer educators meet you more or less depending on where you practice sex work? Why?

## Appendix B: Information sheet and informed consent form for the qualitative study

### Information Sheet for Study Participants in Research Studies You will be given a copy of this information sheet.

Title of Project: Typology of female sex workers and associated HIV risk, Karnataka, India

This study has been approved by the UCL Research Ethics Committee [Project ID Number]:

Name, Work Address and Contact Details of the Principal Researcher and Applicant

**Ana Raluca Buzdugan**  
**Karnataka Health Promotion Trust**  
**Rajajinagar IT/BT Park, # 1-4,**  
**Rajajinagar Industrial Area, Behind**  
**KSSIDC Administrative Office,**  
**Rajajinagar, Bangalore 560 044**  
**Phone: 91-80-40400200**  
**Mobile: 9902918807**

We would like to invite you to participate in this research project. You should only participate if you want to. Before you decide whether you want to take part, it is important for you to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

We are conducting a study in order to understand the differences in HIV risk between various categories of female sex workers from Karnataka. The study is expected to inform the HIV prevention program in Karnataka, by proposing outreach strategies specific to existing sex work settings. For this purpose, we are interviewing women practicing sex work in various settings. If you agree to participate in the study, the interview would take about one hour to complete and would be conducted in the drop-in-centre or office of local NGO or collective or another place of your choice. The interviews will be audio recorded and the researcher will take notes. During the interview, we would like to discuss with you about various issues related to your involvement in sex work, from privacy and presence of other people, role of network operators, type of clients, alcohol consumption, autonomy, experience of violence to access to services. It is possible that discussing about some of these issues might be embarrassing or upsetting. In this case, if you wish to do so, we would make it available for you to discuss with one of the counsellors working with the local NGO or collective. The results of the study will be made available to the local NGO and/or collective working in this area. You would be able to get access to the results of the study through these organizations.

It is up to you to decide whether to take part or not. If you decide to take part you

are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or decision not to take part, will not affect the standard of care or support you receive from the local NGO. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. All data you provide is anonymous and confidential. We will not be recording your name or any other identifiable information. Therefore, once the data is recorded, nobody will be able to know who provided the information. As participation is anonymous it will not be possible for us to withdraw your data once you have completed the interview. Recordings of interviews will be wiped upon transcription. The transcripts of the interviews will only be available for the research team.

**All data will be collected and stored in accordance with the Data Protection Act 1998.**

## Informed Consent Form for Study Participants in Research Studies

*(define target group i.e. Parent/Guardian/Child/Teacher)*

**Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.**

Title of Project: Typology of female sex workers and associated HIV risk, Karnataka, India

This study has been approved by the UCL Research Ethics Committee [Project ID Number]:

- Thank you for considering to take part in this research. The person organising the research must explain the project to you before you agree to take part.
- If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.
- I understand that my participation will be audio recorded and I am aware of and consent to, any use you intend to make of the recordings after the end of the project.
- I understand that the information I have submitted will be published as a report and a copy will be sent to the local NGO/collective. Confidentiality and anonymity will be maintained and it will not be possible to identify me from any publications.
- I consent to the processing of my personal information for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the provisions of the Data Protection Act 1998.

**Participant's Statement**

I .....

agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Signed:  
OR  
Fingerprint:

Date:

**Researcher's Statement**

I .....

confirm that I have carefully explained the purpose of the study to the participant and outlined any reasonably foreseeable risks or benefits (where applicable).

Signed:

Date: