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Pattern of Condom Use among HIV Positive Street Based Female Sex Workers in Nepal

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Pattern of Condom Use among HIV Positive Street Based Female Sex Workers in Nepal

By

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Master of Science, Asian Institute of Technology, 2005

Thesis Committee Chairs: Deborah McFarland, PhD, MPH
& Rob Stephenson PhD, MSc

An abstract of
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Abstract

Pattern of Condom Use among HIV Positive Street Based Female Sex Workers in Nepal

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Background: Recent studies show that 15.6 percent of street-based female sex workers (SBFSWs) are HIV positive in Kathmandu Nepal. HIV prevention efforts have concentrated efforts towards established sex workers although SBFSWs may be at higher risk. Condom use is a critical prevention strategy. This study examines the pattern of condom use among HIV positive SBFSWs in Nepal in order to inform condom promotion programs and information to a stigmatized and often ignored population of women.

Objectives: (1) Investigate knowledge of HIV prevention and treatment services and sexual risk behaviors among HIV positive street based female sex workers; (2) Elucidate relationships between selected characteristics of HIV+ SBFSW and condom use with partners and/or clients.

Methods: This is an exploratory, descriptive study of self-identified HIV+ SBFSWs in 4 regions of Nepal. We conducted a survey with a convenience sample of HIV+ SBFSWs using a questionnaire based on the HIVBSS. In addition to descriptive statistics, Chi-square and t-tests were performed to analyze bivariate relationships between selected characteristics of the HIV+ SBFSWs and condom use.

Results: 121 HIV positive SBFSWs participated in the study. The prevalence of condom use among HIV positive SBFSWs was relatively low: with husband 13.9%, with regular clients 33.0% and with irregular clients 55.0%. One of the main obstacles for consistent condom use was whether street sex was the primary livelihood or only one of the means of livelihood for the woman ($p=<0.0001$). Significant predictive factors associated with consistency of condom use with their clients were age ($p=0.0425$), education level ($p=0.0007$), single motherhood ($p=0.0027$), knowledge index of HIV/AIDS (mean= 4.163, STD= 2.802, $p=<0.0005$), stigma index (mean= 7.315, STD= 1.657, $p=0.0076$), drug use ($p=0.0110$), and not visiting health care facilities ($p=0.0041$).

Discussion: The results indicate that HIV+ SBFSWs in Nepal do not consistently practice a major preventive safe practice, i.e. the use of condoms with partners and/or clients and thus may be a potential bridging group for the transmission of HIV/AIDS to the general population. HIV/AIDS education and awareness programs must recognize the specific needs of this group of women and target specific messages in a socially and culturally sensitive way to encourage their involvement.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
CD4	Cluster of Differentiation 4 (Glycoprotein molecules found in T cell)
CREHPA	Center for Research on Environment, Health & Population activities
FHI	Family Health International
HIV	Human Immunodeficiency Virus
HBM	Health Belief Model
HIVBSS	HIV Behavioral Surveillance Surveys
JMS	Jagriti Mahila Sung
NCASC	National Center of HIV/AIDS and STDs center
NDHS	Nepal Demographic and Health Survey
SBFSW	Street based female sex workers
STD	Sexually Transmitted Disease
UNGASS	United Nation General Assembly Special Session
USAID	Unites States Agency for Internal Development
UNAIDS	United Nations Program for HIV/AIDS
VCT	Volunteer Counseling and Testing
WATCH-Nepal	Women Acting Together for Change

CHAPTER I: INTRODUCTION

Introduction

Nepal, a Himalayan country with a population size of 23 million, has HIV/AIDS prevalence rate of 0.5% (USAID country report, 2010; NCASC report, 2010). The HIV epidemic is at the stage of a "concentrated epidemic" with virtually all HIV-1 sero-prevalence occurring in most-at-risk groups such as female sex workers, injecting drug users and MSM (USAID country report, 2010). About 15.6% of street based female sex workers in Kathmandu, 40% among injecting drug users and 10% of immigrant workers returning from India are estimated to be HIV positive (Puri et al, 2006; Singh *et al.*, 2005; USAID country report, 2010; NCASC fact sheets, 2010).

Figure 1: Map of Nepal (source: 1999, Magellan Geographic)

The first case of HIV in Nepal was reported in 1988, and in less than 20 years, nearly 70,000 adults and children have become infected (USAID country report, 2010; Singh et al, 2005). Among the total HIV population, 28.6% are women in the reproductive age group. The average number of new infections per year is 4,760 and the average number of AIDS deaths per year is 4,701(NCASC report, 2010). Although most recent reports indicate stabilization of the HIV/AIDS epidemic in Nepal and a downward trend in sero-prevalence among most-at-risk groups, a variety of factors pose continuing challenges to curbing the spread of HIV/AIDS. In Nepal, 28 percent of HIV positive people are believed to be in the "hidden population", known as such because of the difficulty in reaching them due to their remote geographical location. In geographically remote areas, sex workers are likely to remain vulnerable and exposed to STI and HIV infection (UNGASS country progress report, 2008). It is estimated that in the absence of effective public health interventions, HIV/AIDS could become the leading cause of death among Nepal's 15 to 49 year age category in the next few decades. This means that 100,000 to 200,000 young adults could become infected, and 10,000 to 15,000 annual AIDS deaths may occur (USAID country report, 2004; Singh et al, 2005; Puri et al, 2006).

Female sex workers

In Nepal, street based female sex workers are employed by tea stalls, street liquor shops and live in slum areas (CREHPA report, 2001). Established sex workers are employed in hotels, restaurants, massage centers and brothels (CREHPA report, 2001; Jha et al., 2009; Ghimire et al., 2009). Unlike established

sex workers, street based female sex workers are mobile and are hard to define in rural areas (Seddon, 1998). Street based female sex workers are more exposed to HIV/AIDS than established sex workers, and their clients constitute a group that might be playing an important role in the spread of HIV to the general population (Kayembe et al, 2008). Increasing prevalence of HIV in street based female sex workers is an indication of increasing probability of a generalized epidemic (Dandona et al, 2005).

Street based female sex workers are generally younger and are involved in the sex profession at a younger age than established sex workers (Pyett et al, 1997). Street based female sex workers have little or no sense of group identification on the streets, and are very much on their own, and compete with one another to the extent of hostility or violent behaviors (Pyett et al, 1997). Established sex workers, on the other hand, work in groups and are supportive and caring towards each other (Panchanadeswaran et al, 2010; Karandikar et al, 2010; Pyett et al, 1997). Most of the street based female sex workers are homeless, and rely on their clients for accommodation which may be in hotels, motels, client's homes or isolated places in the street or slum areas, whereas established sex workers have proper homes or accommodations (Pyett et al, 1997). Majority of street based female sex workers rely on drugs, alcohols and smoking to ward off perceived violent threats from clients whereas lesser number of established sex workers use drugs and alcohol (Dandona et al, 2005). Street based female sex workers experience significantly more violence from clients than established sex workers (William C.W et al, 2006). Violence is often

perpetrated by their clients, who are generally low income earners such as drivers, army personnel, police, students, street vendors and gangsters (Karandikar et al, 2010). The common trigger of violence is social isolation of sex workers and poor legal protection, and husband's suspicion that their wife may be unfaithful (Panchanadeswaran et al, 2010; Karandikar et al, 2010; Pyett et al, 1997). Street based female sex workers often lose custody of their children, whereas established sex workers generally retain custody of their children, and in some cases keep children with them while remaining active in the sex industry (Pyett et al, 1997).

Street based female sex workers face adverse socio-economic conditions such as poor literacy, lower status in society, and fewer economic opportunities (Dandona et al, 2006). In terms of livelihood, economic vulnerability reflected in average income per day, plays an important role in the pattern of condom use. Dandona et al, 2005 reported that the average income of street based female sex workers in India is Rs 82 (< 2 dollars) per day. On the other hand, established sex workers are in a much better position, as they can charge Rs 1000 to 5000 (25 to 125 dollars) per sex act (CREHPA report, 2001; Jha et al., 2009; Ghimire et al., 2009). Many of the street based female sex workers do not visit healthcare facilities to seek treatment because of lack of money, shyness, fear of being scolded by doctors and misconceptions about side–effects of medical treatment or because of fear of being exposed as sex workers (Ghimire et al., 2009; CREHPA report 2002; William CW et al, 2006; Zhao et al, 2008). Most of the street based female sex workers in Nepal use home prepared herbal

supplements, soap and antiseptic solutions like Dettol to treat their HIV infection (CREHPA report, 2002). Many of them are unaware of their HIV status and may continue to engage in unsafe sexual practices or die without knowing their status (Kshetry, 2008; UNAIDS/NCASC, 2004; Weeks et al, 2007).

Thus, in addition to prevailing economic hardships, physical threats and coercion from clients, absence of legal protection, extreme social isolation and lack of community support further add to the difficulties experienced by street based female sex workers in their attempts to insist on condom use for all sex services or safe sexual practices (Pyett et al, 1997; Ngo et al, 2007; Simkhada et al, 2010; Ghimire et al., 2009; Beattie et al, 2010). From the perspective of HIV prevention programs, Dandona et al, 2005 found that street based female sex workers were nearly 3.5 times less likely to use condoms with clients as compared with the established female sex workers.

Theoretical Framework

The theoretical framework in this study is based on the Health Belief Model, which posits that people who perceive themselves at risk for negative outcomes are more likely to reduce risk behaviors than those who do not see themselves at risk (Boone et al, 2004). The likelihood of a person changing behavior depends on whether the person feels vulnerable to the condition, the seriousness of the condition and its consequences, the material and psychological costs of taking action, and whether the person feels confidence in one's ability to take action. Previous studies have shown the use of the Health

Belief Model in predicting safer sex behaviors among an adolescent population (Boone et al, 2004). The Health Belief Model accounts for cognitive and interpersonal processes which often influence condom use behavior. Some of the current research on attitudes towards condom use and perceived threat of HIV/AIDS sheds light on how these constructs may play out in sex workers' condom use with their clients.

Study Rationale

Research on HIV positive street based female sex workers is of critical importance for HIV/AIDS intervention. The threat of HIV/AIDS transmission from HIV positive street based female sex workers is closely connected to their high risk behavior (Morris et al, 1996). An effective method for reducing the spread of HIV/AIDS is promoting consistent use of condom by the clients of female sex workers (Zhao et al, 2008). Although consistent condom use has become the main means to protect female sex workers from HIV/AIDS infection, several research studies have indicated that the rate of condom use with regular and irregular partners varies and depends on the situation of the sex workers (Singh *et al.*, 2005; Puri et al, 2006; Dandona at, 2006; Zhao et al, 2008). Many female sex workers with multiple partners fail to consistently use condoms. As a result, their clients are at increased risk of acquiring HIV/AIDS, and the female sex workers themselves are at a greater risk of increasing viral load, posing challenges for HIV/AIDS prevention and treatment (Buckingham et al, 2005).

This study explores the pattern of condom use among HIV positive female sex workers in Nepal. The pattern of condom use by street based female sex workers with their clients is an important factor to understand the consistency of condom use. Consistent condom use depends on a variety of factors, including age, marital status, education, number of children, number of clients, livelihood, violence, knowledge and stigma (Dandona et al, 2005). These characteristics can be used to define the target group for an HIV intervention program. In Nepal, HIV prevention efforts are primarily aimed at established commercial sex workers (Simkhada et al, 2010; Ghimire et al., 2009; Singh et al, 2005); and street based female sex workers are rarely targeted for HIV prevention efforts. There is no evidence of research conducted on the pattern of condom use among HIV positive street based female sex workers in Nepal. This study contributes to filling the void by examining the association between access to healthcare facilities, socio-economic factors, stigma, violence, and condom use among HIV/AIDS positive street based female sex workers in Nepal.

CHAPTER II: LITERATURE REVIEW

Overview

This chapter begins with a general description of the pattern of condom use by female sex workers. It is followed by the brief introduction of the theoretical frame work "Health Belief Model" explaining its relevance. The constructs of the Health Belief Model: "perceived susceptibility", "perceived severity", "perceived barriers" and "self efficacy" were used to explain risk behaviors, knowledge, stigma, and access to health care facilities, socio-economic status, violence and the condom use of the female sex workers. This literature review is designed to provide an overview of patterns of condom use, barriers female sex workers face in seeking healthcare facilities and social support, and their risk behaviors in spreading HIV/AIDS in Nepal.

The patterns of condom use

Street based female sex workers grow up in poor socio-economic environmental settings (Stark et al, 2004). They face numerous hardships in the course of their upbringing, including abusive experiences in their childhood (Dandona et al, 2006; Sarkar, N. N, 2008; Parks et al., 2009; Mai et al, 2010; Karandikar et al, 2010). These are the sex workers who are likely to engage risky sex as they grow older (Sterk et al, 2004). Investigating street-based female sex workers pattern of condom use with their husbands, regular clients and irregular clients may help explain why some female sex workers cease using condoms while still being HIV/AIDS positive. Several studies found that the primary reason for using a condom was to prevent pregnancy, implying that condom use during

street sex may be viewed by such sex workers as unnecessary (Roth, Joseph et al, 2001). Oral medicines and/or contraceptives negate the need of condoms for pregnancy prevention; one study found that women who used oral contraceptives were significantly less likely to use condoms with their clients (Parks et al, 2009).

According to the Health Belief Model (HBM), individuals must believe that a particular behavior will protect them from illness if they are to place value on the behavior (perceive susceptibility). The self protective behavior will occur when individuals feel susceptible to illness, believe that the illness would be severe (perceive severity), that the benefits of the protective behaviors outweigh the barriers to enacting it (perceive barrier), and feel that they are capable of performing the protective behaviors (self efficacy) (Boone et al, 2004). These constructs of Health Belief Model are important to explain the predictive factors associated with consistency of condom use among street based female sex workers with their clients.

Perceived Susceptibility

According to the HBM model, perceived susceptibility is about whether sex workers feel vulnerable to HIV/AIDS infection. It is about the risk behaviors of sex workers. Street based female sex workers live in poverty and tend to experience homelessness. They are involved in high risk sexual behaviors and rely on prostitution as their major source of livelihood (CREHPA report, 2002). The factors influencing female sex workers to practice high-risk sexual behaviors include trust with regular partners, who are often clean and healthy looking,

safety from psychological and physical insecurity, relationship commitment, financial worries, lack of family support, client's pressure, drinking alcohol and using drugs before sex (Poudel KC et al, 2004; Comer et al, 2000; Lescano et al, 2006; Dandona et al, 2006, Mai et al, 2010).

Street based female sex workers often hold perceptions that they can manage and control the spread of HIV/AIDS contraction or transmission (Thompson et al, 1999). They employ strategies for self protection which in reality provide little or no protection from STD and HIV/AIDS transmission. Such strategies include non use of condom with husband or intimate partners, not having regular checkups in the hospitals and not discussing sexual history with regular clients (Thompson et al, 1999; Hutchinson et al, 2001). Rather than providing real protection, these strategies increase the risk of HIV/AIDS transmission from the sex workers to the general population (Thompson et al, 1999). These protection strategies only provide a mistaken but psychological beneficial perception that they are less vulnerable to acquiring HIV/AIDS from clients (Thompson et al, 1999). Regular HIV/AIDS testing will not stop HIV contraction or transmission once an individual is infected if he or she does not use condoms (Hutchinson et al, 2001).

Female sex workers often believe in self protection behaviors by choosing clean and healthy looking clients, maintaining regular partners and monogamy. However, such attitudes may be misleading and may involve risk as they may not know the real HIV status of their clients (Comer et al, 2000). Female sex workers

often believe that they can reduce HIV contract or transmission if they use condoms with irregular clients but not with regular clients (Hoffman et al, 2000). One study showed that among female sex workers, the rate of condom use with irregular partners is higher than with regular partners (Macaluso et al, 2000). They underestimate the risk of contracting or transmitting HIV/AIDS with regular or intimate partners due to their feeling of safety from psychological insecurity and physical violence (Comer et al, 2000; Lescano et al, 2006). Consistency of condom use decreases as new clients become regular, as lower perceived risk is associated with higher levels of commitment and longer relationships (Macaluso et al, 2000, Williamson et al, 2009, Reisen et al, 1999). Female sex workers also believe that they will not acquire or transmit HIV if they have sex with clean and healthy looking clients (Dedobbeleet et al, 2005). Watson et al, 2005 showed that university girls do not believe in using condoms with partners who are clean and committed, as committed relationships are considered as monogamous and safe. Most often, sex workers believe that knowing the sexual history of their regular partners makes it safer to have sex without condoms (Watson et al, 2005). However, evaluating a partner's sexual history is subject to false judgment as clients are often not reliable and mislead the sex workers about their sexual relationship with other sex workers (Stoner et al, 2003, Drumright et al, 2004).

The best predictor of feeling susceptible to HIV/AIDS infection is knowledge or suspicion of partner's infidelity (Hoffman et al, 2000). However, perceived susceptibility to HIV/AIDS infection may not influence female sex workers condom use with their clients, as most often they are concerned more

with earning money and remain careless using condoms (Park et al, 2009). Further, perceived susceptibility to HIV/AIDS infection depends on sex workers living situation. Sex workers with a close network of their peers are cautious of the infection, as they share the perceived risk with each other's (CREPHA report, 2002; Simkhada et al, 2010). By moving away from the social controls of peers and family, however, they often become exposed to drug and alcohol use and are involved with a large number of sexual activities (Puri et al, 2004). In such situations, they engage in sexual activities without condoms, as access to condoms is often limited by the stigma associated with purchasing them or poor financial conditions (Simkhada et al, 2010; Poudel et al, 2000). Perceived susceptibility to HIV/AIDS contraction or transmission also depends on female sex workers' health and age. HIV positive street based female sex workers who possess good health continue making money through sex work, facilitating the continuing transmission of HIV infection (Poudel et al, 2000). Normally, young sex workers do not comprehend the risks of contracting or transmitting of HIV/AIDS and display high risk behavior with a low rate of condom use (Haque et al, 2009).

Perceived severity

According to the Health Belief Model, sex workers must understand that STD will lead to HIV/AIDS and finally death. Perceived severity is whether a person feels the consequences of the condition can be severe or not. It is associated with knowledge of HIV/AIDS among sex workers. Lack of disease specific knowledge could affect perceived severity of HIV/AIDS transmission

among sex workers. If street based sex workers are not familiar with HIV/AIDS, let alone its acute and chronic consequences, disease specific severity may not affect their condom use decisions. Knowledge that HIV can be prevented was a strong predictor of consistent condom use for penetrative sex between female sex workers and their clients. Consistent condom use on the other hand, is associated with access to free condoms. This association shows that knowledge about HIV and access to free condoms are vital for promoting increased use of condoms among female sex workers (Dandona et al, 2005). One study reported that those who were poorer in their knowledge about STD and HIV/AIDS transmission were significantly more likely to be inconsistent condom users than those with better knowledge (Park et al, 2010).

Increasing knowledge about HIV may be effective in changing attitudes about risk and future condom use, and may in fact produce a change in behavior (Park et al, 2010). Several studies indicated that HIV/AIDS knowledge alone does not predict safer sex practice behaviors. For example, although clients know that monogamy is a protected strategy, they visit sex workers who are known to have many sex partners, implying that knowledge is necessary but insufficient to change behavior (Wee, et al, 2004). Davis et al study showed that HIV/AIDS awareness among college female students in USA, Australia and Hong Kong was not associated with safer sex practices or an intention of future safe sex practices. It was rather influenced by social-economic, cultural and psychological factors of the individuals (Davis et al, 2009). One study showed that HIV/AIDS knowledge in India was not significantly related to condom use,

signifying that knowing more about AIDS may not translate into greater likelihood of safe sexual behavior (Prasanna et al, 2003). Often sex workers think that condoms are more useful for pregnancy prevention than prevention of HIV/AIDS transmission (Prasanna et al, 2003).

Perceived Barriers

According to the Health Belief Model, a perceived barrier is related to the sex workers feeling about the material and psychological costs of taking action. This construct of Health Belief Model is used to elucidate the barriers faced by street based female sex workers to important HIV prevention measures such as condom use.

Stigma

Street based female sex workers face many dangers and sources of stress in the form of physical and sexual assaults and other forms of victimization (Kidd et al, 2007). To support themselves, they engage in numerous activities but mainly prostitution. Such activities result in stigma. Stigma is often accompanied by low self esteem (Kidd, et al, 2007). One study reported that self-esteem was one of the key predictors of condom-related attitudes. The lower the self esteem of sex workers, the more likely they are to engage in risky sexual behavior (Sterk et al, 2004). Stigma can be a barrier to important HIV prevention measures such as condom use (Amuri et al, 2011). This is because having HIV disease is viewed more negatively than many other stigmatizing conditions such as mental illness or other physical illness (Sengupta et al, 2010). The rate of condom use

depends on the location in which sex workers are working. For example, condom use was less frequent in the Middle East even though HIV/AIDS awareness is high which is because of the residual stigma attached to the condom (Sarkar, N. N, 2008). In Mumbai, sex workers and their clients indicated that lack of privacy in stores and the social stigma associated with condoms were barriers to condom use (Sarkar, N. N, 2008). Sex workers in Hong Kong are subject to various stigmatizing forces in their daily lives from the police, their families, communities and clients. Such situations can have negative impact on the sex workers' health as a result of physical or verbal abuse. As a result, they hide their identity and diseases and further risk their health by engaging in risky sexual behaviors (Wong et al, 2011). The stigma associated with HIV/AIDS infection has long been recognized as a significant barrier in the worldwide fight against HIV/AIDS. HIV stigma interferes with the decision to disclose one's infection to others, which can lead to sexual risk and delay HIV treatment (Ekstrand et al, 2011). The study conducted by Cao et al, 2010 mentioned: "One of the major barriers to the adoption of HIV prevention strategies is that HIV-related stigma can cause people to refute risk, refuse testing, delay treatment, not disclose their HIV status and not seek public assistance". As a result, their friends and relatives may acquire HIV infection from female sex workers and their continuous engagement in risky behavior might spread the disease to the general population (Ekstrand et al, 2011).

People develop ingrained negative thoughts about prostitution (Poudel et al, 2000). Female sex workers at risk that are seeking health care are in a weak

position to proactively discuss their health issues compared to other patients (Jha et al, 2009). Stigma among doctors and other health care providers compromises the treatment and care of people with HIV and members of other related marginal groups, particularly sex workers (Jha et al, 2009). Since female sex workers do not seek health care as willingly as the general population due to moral and cultural obstacles, stigma hindrance among female sex workers in buying and using condoms creates risk of HIV/AIDS transmission (Simkhada et al, 2010).

Access to health care facilities

Female sex workers face a variety of health care system barriers to accessing health care facilities for treatment. One study reported that sex workers who showed interest in visiting health care facilities did not want to burden themselves by regular monthly follow up and adherence to medication, as it would mean losing clients and reducing their daily wages (Chakrapani et al, 2009). Another study reported that female sex workers are reluctant to initiate medical treatment such as Anti-Retroviral Therapy (ART) because doing so would force them to stop drinking alcohol, which they do not wish to do (Wee et al, 2004). Several literatures have shown that sex workers who drink alcohol before sex rarely use condoms with their clients (Wee et al, 2004, Chakrapani et al, 2009) and indirectly promote their risky behaviors including non-use of condom with their clients (Amuri et al, 2011, Wee et al, 2004). A study conducted in Tanzania showed that female sex workers did not visit health care facilities for medication and to access condoms because they believed increasing their condom use would decrease their number of clients. Condoms, even though

freely available, were not used with their long term clients (Outwater et al, 2001). In a country like Bangladesh, the poorest street based female sex workers suffer the greatest social exclusion with the least access to health care and health information and least means of protecting themselves from HIV/AIDS transmission (Nedhi et al, 2009).

In Nepal, only a few health facilities are equipped with essential equipment and technicians trained to perform CD4 counts (Singh et al, 2005). This has created hindrances to identifying the HIV status of most sex workers in urban areas (Ghimire et al, 2009). In addition, most of the donor representatives lack direct knowledge of HIV/AIDS epidemics in rural areas since they rely on guidance provided by NGOs based in Kathmandu (Singh et al, 2005). Due to the urban-centric nature of most governmental and non-governmental organizations, funds for health care facilities and Voluntary Counseling and Testing (VCT) services for STD and HIV/AIDS in rural areas are limited (Estelle *et al*, 2003). Female sex workers without VCT services in rural areas pose serious risk of HIV transmission in rural places (Ghimere et al, 2009).

Difficulties in confirming results and maintaining confidentiality are other problematic issues in testing and counseling services (UNAIDS/NCASC 2006). The behavior of the service providers, sexual harassment, distance, and poor communication are some of the constraints female sex workers face in order to use health care services (Ghimire et al., 2009; Karandikar et al, 2010). A combination of personal and service-related factors acted as critical barriers in accessing health services (Ghimire et al., 2009). Street based female sex

workers are mostly mobile and are hard to identify in rural areas (Furber et al., 2002). Their high risk behavior and low rate of condom use is related to poor awareness of HIV/AIDS due to poor access to health care facilities (Ghimire et al, 2009).The provision of effective health care to HIV positive female sex workers is a growing concern (Mahat, Ganga, 2005).

Socioeconomic Status

Access to condom use depends on sex workers' socio-economic status. Street based female sex workers are a marginalized population who often do not have a stable home. Homeless sex workers are less likely to use condoms as they have more immediate concerns than the long term risk of HIV, such as finding shelter for the night and feeding their children (Ober et al, 2010; CREHPA report, 2002). They are most often involved clandestinely in sex work due to an unfriendly legal and social environment, because society discriminates against them as immoral women (Karandikar et al, 2010). As a result, they are at a higher risk of HIV infection because they use condoms less frequently with their clients compared to home or brothel based female sex workers (Dandona et al, 2006; Mai et al, 2010; Karandikar et al, 2010).

These socio-economic factors increase a sex worker's vulnerability and may also encourage female sex workers' to have more commercial clients at a cheaper cost, with condom use left to the discretion of the clients (Nabila El-Bassel et al, 2001). The negotiation of consistent condom use has economic consequences; sex workers in Kolkota, India who consistently use condoms

experience financial losses estimated around 70% compared to less consistent condom use" (Swendeman et al, 2009). In Bangladesh, sex workers are from the extreme urban poor, and their motivating factor is usually money (Eva et al, 2007). They struggle against adverse conditions such as illiteracy, low social status, and limited economic opportunity, as sex work may be one of the few economic options available to them (William CW et al, 2006). In Andhra Pradesh, India, although NGOs distribute condoms freely, because sex workers do not have sufficient income to purchase them, Illiterate street based female sex workers reported that they had no access to condoms (Sarkar, N.N, 2008). The low purchasing power of the rural population, the cost of condoms, and rural-urban differences in availability of condoms greatly affected condom use among sex workers in most developing countries (Sarkar, N. N, 2008).

Violence

Street-based sex workers typically occupy a low socio-economic status in the community and are exposed to high levels of violence including physical and verbal assaults. Violence against street based female sex workers is committed by families, communities and clients (Lichtenstein, et al, 2005). Violence from the family, particularly from husbands, often occurs when sex workers are charged with infidelity (Lichtenstein, et al, 2005). Negotiating condom use with her husband may be very risky for a woman when she is charged with infidelity. Violence from community members is due to her sexual activities in the surrounding, HIV/AIDS infection, poor social support and physical isolation (Lichtenstein, 2005; Teitelman et al, 2007; Go et al, 2011).

Many sex workers are at high risk of HIV infection and face resistance and in some cases violence in response to their requests that a condom be used by their clients (Sarkar, N.N, 2008). In Tijuana, Mexico, single mothers involved in street sex often face risks of physical assaults from clients belonging to their community, as most clients do not want to use condoms and offer additional money for unprotected sex (Sarkar, N.N, 2008). In mainland China, street based female sex workers were less likely to use condoms with their clients due to threats of violence from clients (Sarkar, N. N, 2008). One study showed that women in violent relationships were less likely to use condoms, or ask partners to use condoms, because of an increased risk of verbal or physical abuse when compared to non-violent relationships (Fanslow et al, 2008). Such situations occur mostly among street based female sex workers, who even after knowing the importance of condoms are coerced to practice unsafe sex (Sarkar, N. N, 2008; Fanslow et al, 2008).

In countries like Canada, North America, Australia and the United Kingdom, respective government policies prohibit solicitation of sex in public places. As a result of legal restrictions on working in established settings, street based female sex workers are pushed to work in dark and isolated places with lack of protection from violence and exploitation (Shannon et al, 2009). The most common trigger of violence among street based female sex workers in India was the intimate partner's or the husband's suspicion of being unfaithful combined with alcohol use (Panchanadeswaran et al, 2010). Young girls or those who are new to the sex profession are more likely to experience such violence

(Karandikar et al, 2010). They are usually rejected by their families, as well as ostracized by the wider society (Poudel et al, 2000). They continue sex work clandestinely and use condoms at the discretion of their clients (Poudel et al, 2000, Karandikar et al, 2010). Thus, the acts of violence from regular partners, either husband or lovers, or violence and rejection from families and communities resulting from inadvertent disclosure of sex work deterred sex workers from negotiating condom use and lowering their risk behaviors (Poudel et al, 2000; Beattie et al, 2010; Karandikar et al, 2010).

Self-efficacy

According to the Health Belief Model, awareness programs, education, and peer support will encourage sex workers to consistently use condoms with their clients and such programs might help sex workers build confidence to use condoms consistently. Thus self-efficacy is about sex workers' confidence to their ability to take action or require their clients to use condoms.

Although HIV intervention efforts generally have met with success, research has also revealed that it has been difficult for people in many countries to achieve sustained, consistent safer sex behaviors. A number of studies have found that risk taking sexual behavior is unlikely to decline. Most research indicated that, people find purchasing of condoms embarrassing, are uncomfortable to discuss condom use with their partners or feel condom use is inconvenient (Sterk et al, 2004). Such negative feelings discourage people from using condoms.

Most often, street based female sex workers engage in sexual activities under the influence of alcohol and sometimes drugs (Park et al, 2009). Female sex workers who are intoxicated are more likely to have multiple sexual partners (Wee et al, 2004). Sex workers with multiple sexual partners have been found to have a greater likelihood for risky sexual behavior and negative outcomes (Wee et al, 2004, Park et al, 2009). Female sex workers who regularly visit bars, tea stalls, park areas, and bus and train stations in search of clients encounter different types of sex partners and condom use with them depends on the behavior of such clients (Park et al, 2009). One study showed that, for casual partners encountered in such places, the rate of condom use is lower and sex is more spontaneous and non-anticipated (Pepijn et al, 2006).

Several studies mentioned that sex workers insistence on condom use with regular sexual partners or husbands may be perceived as an evidence of the sex workers infidelity (Pepijn et al, 2006; Visser et al, 1999). In Brazil, South Africa and Mexico, women avoid talking about condom use due to fear of being suspected of infidelity that could lead to the couple's separation (Sarkar, N.N, 2008). Such perceived fear discourage sex workers from talking about condom use and involves them in risky sexual behaviors, including unprotected sex. Further, several studies indicated that condom use is more strongly influenced by concerns about pregnancy prevention than concerns about HIV/AIDS transmission (Pepijn et al, 2006; Visser et al, 1999). In other words, condoms are considered as a contraceptive measure. Most often, older women consider condom as a birth control device and thus are less likely than younger

generations to use condoms (Sterk et al, 2004). In Nepal, increasing urbanization has led to an increase in the age of marriage. It also has created a risk of frequent sexual activities without contraceptives among young people, although contraceptives are available in local health services (Regmi, Krishna, 2009). Unprotected sex between sex workers and their clients is one of the behaviors that is associated with the highest risk of HIV infection in Nepal. Clients serve as a bridge for HIV/AIDS transmission to the mainstream population, such as their wives or girlfriends (Wee et al, 2004).

Summary

Using the Health Belief Model as a template for organizing the literature review, we see that perceived susceptibility to HIV/AIDS infection may influence female sex workers condom use with their clients. Having HIV disease specific knowledge may affect perceived severity, reducing the HIV/AIDS transmission from sex workers to the general population. Knowledge that HIV can be prevented is a strong predictor of consistent condom use by female sex workers with their clients. Improved socio-economic status, access to healthcare facilities and stigma could lower the barriers faced by street based female sex workers to HIV prevention measures such as condom use. Therefore, the constructs of the Health Belief Model are important to explain the predictive factors associated with consistency of condom use among street based female sex workers with their clients. Individuals must believe that a particular behavior will protect them from HIV infection. The self protective behavior will occur when individuals feel

susceptible to HIV infection. The benefits of the protective behaviors should outweigh the barriers to enacting it. Individual should feel that they are capable of performing the protective behaviors in order to remain safe from acquiring or transmitting HIV/AIDS epidemics.

CHAPTER III: METHODS

Study Population and Study Design

This study was an exploratory, cross sectional study among a convenience sample survey as the main data collection method. It targeted HIV positive street based female sex workers (SBFSW) aged between 18 and 55 years and involved in the commercial sex trade at least for six months prior to this survey. There are five regions in Nepal. The investigator sampled 120 "self identified" HIV positive SBFSWs from four regions: eastern (Jhapa and Morang), central (Kathmandu), western (Butawal and Pokhara) and mid western (Nepalgunj) who were already identified and recorded by local NGOs prior to this study. These self identified SBFSWs disclosed their HIV status voluntarily to their peer educators (community outreach workers) of local NGOs such as Jagriti Mahila Sung (JMS) or Junkere in past meetings in expectation of receiving help and medical support from donors and hospitals. Some of these sex workers and their affiliated local NGOs have been advocating for the welfare of sex workers in Nepal. The local NGO named "WATCH-Nepal" based in Kathmandu provided assistance to coordinate with local NGOs in the targeted regions. Data were collected from June 15, 2010 to August 5, 2010

Procedure

Institutional Review Board (IRB) has determined that this study does not require IRB review because it does not meet the definition of "research" involving in the "Human subjects" or the definition of "clinical investigation" as set forth in

Emory policies and procedures and federal rules. In Nepal, before starting the survey, the investigator recruited and trained a research assistant who previously worked for HIV/AIDS prevention and treatment in Nepal. He was trained in 1) seeking verbal consents, 2) reading the consent letter, 3) conducting interviews without assisting the sex worker in expressing their viewpoints, and 4) becoming sensitive to maintaining confidentiality of the interviewee's privacy of information. The NGO peer educators were informed beforehand about our meeting purpose and the research objectives. Accordingly, in the meeting, NGO peer educators informed the sex workers about the opportunity to participate in the study. The investigators also further explained to them about research objectives. After the meeting, the investigators asked these sex workers about their interest/consent to participate in the study. Those who felt comfortable and gave oral consent to participate in the study were interviewed on the same day at a location convenient to them. They were told clearly that confidentiality of information would be maintained by using codes to replace identifiers. Since sex workers are mostly illiterate, a consent letter was read (verbal consent), avoiding the need for them to provide a written consent in their home, which could have been exposed to others, thereby risking confidentiality of their HIV status.

The questionnaire tool used was developed in English and Nepali. It was pretested with ten female sex workers in Nepalgunj before the actual survey took place. Modifications were made based on the pretest results, making it suitable for the target population. For each sample, 15-20 minutes was spent to complete the interview.

Instrument used

The questionnaire tool used in this study was based on the manual for conducting HIV Behavioral Surveillance Surveys (HIVBSS) among displaced populations and their surrounding communities, developed by the United Nations High Commissioner for Refugees. The questions in this tool cover demographic information, including age, sex, marital status, level of education completed, number of children; condom use; sexual risk behavior; sexual abuse, drug use and other risk behavior; knowledge of sexually transmitted infection; knowledge, opinion and attitudes towards HIV/AIDS; violence; and knowledge and accessibility of services (See Appendix A). Some of the questions were designed by the investigator himself to assess the socio-economic condition and stigma issues of HIV positive street based female sex workers.

Outcome measures

The pattern of condom use among HIV positive street based female sex workers was assessed using four outcome variables such as "condom used" with the clients in the past 12 months; "with whom condom was used" in the past 12 months; "number of clients" in the past 30 days; and "obtaining condom" in the past 12 months. Descriptive variables were constructed using Health Belief Model. "Perceived susceptibility" was used to assess the risk behavior of female sex workers; "perceived severity" was used to assess the knowledge of sex workers; "perceived barriers" was used to asses stigma, access to health care facilities, socio-economic status and violence; and "self efficacy" was used to asses condom use by female sex workers.

Data analysis

Data were analyzed using Epi-info and SAS for univariate and bivariate analysis. Univariate analysis was performed to determine the proportion and distribution of all variables of interest. Bivariate analysis was used to determine the association between all the variables, including socio-demographic variables, knowledge and stigma, violence, access to medical facilities and risk behaviors with each of the four outcome measures to understand the pattern of condom use.

Age distribution of the respondents was divided into six categories: 15-20, 21-25, 26-30, 31-35, 36-40 and >41. Education or grade distribution was divided into three categories: None, Primary and Secondary. Condom use distribution by the clients was classified as husband, regular and irregular clients. The index of knowledge of HIV/AIDS transmission and index of stigma was based on "Yes" and "No" options with multiple choice answers. The distribution of assault in data analysis was categorized into parents, husband and others. Likewise marriage age of sex workers was categorized into age below 18 and age above 18. The number of children of sex workers were categorized into none, 1-4 and > 4. Similarly the number of clients in the past month was categorized into 1-10, 10-20 and > 20.

For the knowledge index of avoiding getting HIV/AIDS, the questionnaire tool had 17 questions, each question weighted as 1. If the participant answered one question correctly, the participant scored 1. Final scores were determined

based on the sum of the questions answered correctly. For example, if the participant answered 5 of the 17 questions correct, she scored 5 for the knowledge index. Likewise, for the stigma index of avoiding getting HIV/AIDS, the questionnaire tool had 9 questions, each question weighted as 1. If the participant answered one answer correctly, the participant scored 1. Final scores were based on the sum of the questions answered correctly.

CHAPTER IV: RESULTS

Introduction

Data were analyzed using Epi-info and SAS programs for univariate and bivariate analysis. Univariate analysis was performed to determine the proportion and distribution of all variables of interest. Bivariate analysis was performed to find the relationship between socioeconomic status, knowledge of HIV/AIDS, violence, access to medical facilities, and stigma with outcome measures: *condom use*, *with whom condom was used* and *obtaining condom*. For this analysis, Mantel-Haenszel chi-square test and t-test were used.

Result of Univariate analysis

Socio-economic status

A total of 121 HIV positive street based female sex workers in Nepal agreed to participate, consented and completed the survey. Participants' age ranged from 18 to 55 years, of which 49.6% (N=60) of sex workers were 18-25 years of age. The majority of the sex workers had no formal education (38.3%, N=46), while 30.8% (N=37) had primary education and 30.8% (N=37) had secondary education. Among the sex workers who were either married or widow/divorced, 78.9% (N=71) of them were married before the age of 18. The sex workers who were identified as single represented 25.8% (N=31), widower/divorced represented 29.1% (N=35) and married represented 45% (N=54) of the total sample. The sex workers who reported having 1-4 number of children represented 60.5% (N=72) of the total sample, while 36.9% (N=44) reported that they had no children. The proportion of sex workers whose

livelihood was limited to street sex only was 61.2% while the rest of the sex workers, whose livelihood was both sex work and combination of other activities (labor, agriculture and small business) represented 38.8% (N=47) of the total sample (Table 1)

Table 1: Distribution of variables on socio-economic status of SBFSWs

Distribution of variables related to socio-economic status		
Variables	**Variables categories**	**SBFSW (N=121) #(% of N)**
Age of the sex workers	18-23	49 (40.5%)
	24-29	32 (26.4%)
	30-35	16 (13.2%)
	36-41	13 (10.7%)
	>42	11 (9.1%)
Source of family livelihood	Street sex work only	74 (61.2%)
	Sex work and others	47(38.8%)
Education level	None	46 (38.3%)
	Primary	37 (30.8%)
	Secondary	37 (30.8%)
Marital Status	Single	31(25.8%)
	Married	54(45%)
	Widow/Divorced	35(29.1%)
Number of children	None	44(37%)
	1-4	72(60.5%)
	>4	3 (2.5%)
Age at first marriage	Less than 18	71 (78.9%)
	Greater than 18	19(21.1%)

Knowledge of STD and HIV/AIDS

Although 92.6% (N=112) reported that they had knowledge of STD and HIV/AIDS infection, 52.9% (N=64) of the sex workers reported that healthy looking people could not be HIV positive (Table 2).

Table 2: Distribution of variables on knowledge of SBFSWs

Distribution of variables related to knowledge of SBFSWs		
Knowledge of STD/HIV symptoms	No	9 (7.4%)
	Yes	112 (92.6%)
Knowledge of HIV in healthy looking people	No	64 (52.9%)
	Yes	57 (47.1%)

Stigma

Among 88 street based female sex workers who did not visit hospitals for medical treatment, 88.6% (N=78) reported it was due to stigma, 4.6% (N=4) reported it was due to cost and 3.4 %(N=3) reported it was due to distance.

Table 3: Distribution of variables on stigma of SBFSWs

Distribution of variables related to stigma		
Reasons avoiding medical treatment	Stigma	78 (88.6%)
	Afraid of result	2 (2.3%)
	Costly	4 (4.6%)
	Lack of interest	1 (1.1%)
	Distance	3 (3.4%)
Family support when stigmatized	No	68 (56.7%)
	Yes	52 (43.3%)
Reasons avoiding family support	Family avoid/hate me	7 (10.1%)
	protect family prestige	9 (13%)
	To conceal disease	53 (76.8%)
Org support when stigmatized	No	7 (5.8%)
	Yes	113 (94.2%)
Reasons avoiding org support	DK/No Response	114 (94.2%)
	Org. do not support me	1 (0.8%)
	Feel it is not necessary	3 (2.5%)
	No access to Org.	3 (2.5%)

Among 69 sex workers who did not seek family support, 76.8% (N=53) reported that they wanted to conceal their disease to their parents, while 13% (N=9)

reported that they wanted to protect their family prestige. However, 94.2% (N=113) reported that they sought organizational support whenever they were stigmatized, while the remaining 5.8% (N=7) reported that they did not have access to organizations (Table 3).

Violence

Of the total participants, 63.6% (N=77) of street based female sex workers reported that they were assaulted both verbally and physically frequently. Similarly, among the total participants, 62% (N=75) were assaulted by the family members, such as husbands (23.1%), parents (12.4%) or siblings (9.92%).

Table 4: Distribution of variables on violence and knowledge of SBFSWs

Distribution of variables related to violence of SBFSWs		
Variables	**Variables categories**	**SBFSW (N=121) #(% of N)**
Family assaults	No	46 (38%)
	Yes	75 (62%)
Community assaults	No	75 (62.5%)
	Yes	45 (37.5%)
Frequency of assaults	DK/No response	44 (36.4%)
	Very often/frequently	77 (63.6%)
Reasons for assaults	Due to my disease HIV	37 (30.6%)
	Due to my clients' visits	25 (20.7%)
	Offends husband prestige	3 (2.5%)
	My parents are drunkards	2 (1.7%)
	My husband is a drunkard	6 (5%)
	DK/No response	47 (38.8%)
Family person assaulting you	Husband	28 (23.1%)
	Parents	15 (12.4%)
	Siblings	12 (9.9%)

Likewise 37.5% (N=45) reported that they were assaulted by community members. The main reasons for assault were primarily their HIV infection (30.6%, N=37) and their clients visits (20.7%, N=25) (Table 4).

Access to healthcare facilities by SBFSWs

The proportion of sex workers who reported having knowledge of places to treat HIV positive people was 98.4% (N=119). Among them, 71.1% (N=86) reported that government hospitals were the main healthcare facilities for HIV treatment, while 14.1% (N=17) reported HIV could be treated in NGO/INGO run clinics.

Table 5: Distribution of variables on healthcare facilities of SBFSWs

Distribution of variables related to medical access of SBFSWs		
Variables	**Variables categories**	**SBFSW (N=121) #(% of N)**
Knowledge of places treating HIV/AIDS	No	2 (1.7%)
	Yes	119 (98.4%)
Information on healthcare facilities to treat HIV/AIDs	Government hospital	86 (71.1%)
	Government clinics	2 (1.7%)
	Private hospital	3 (2.5%)
	Private medical doctor	1 (0.8%)
	Private mobile clinic	8 (6.6%)
	NGO/INGO Clinic	17 (14.1%)
	DK	4 (3.3%)
Location of health facilities	DK	7 (5.8%)
	Locally	44 (36.4%)
	Outsides local places	70 (57.9%)
Accessibility of health facilities	No	43 (35.5%)
	Yes	78 (64.5%)
Visit health facilities for treatment	No	87 (72%)
	Yes	34 (28.1%)

However, a majority reported that healthcare facilities were typically not located in their villages (57.9%, N=70) and 35.5% (N=43) reported that the healthcare facilities were not at all accessible to them. Among the total 121 participants, a surprising 71.9% (N=87) reported that they did not visit healthcare facilities at all, whether located locally or elsewhere (Table 5).

Condom use

Almost all the street based female sex workers (98.4%, N=119) reported that they had heard of male condoms. They reported that condoms can be purchased from pharmacies (33.3%, N=40), from government health facilities (22.5%, N=27) and from the NGO/INGOs (12.5%, N=15).

Table 6: Distribution of variables on condom use of SBFSWs

Distribution of variables related to condom use of SBFSWs		
Variables	**Variables categories**	**SBFSW (N=121) #(% of N)**
Condom use with clients	Husband	13(11.9%)
	Regular clients	36(33%)
	Irregular clients	60(55.1%)
Reasons not using condom	Partner objected	83 (69.2%)
	I trust my partner	19 (15.8%)
	Don't know condom	2 (1.7%)
	No response	10 (8.3%)
	Not necessary	6 (5%)
Heard of male condom	Yes	119 (98.4%)
	No	2 (1.7%)
Know places to buy condoms	Pharmacy	40 (33.3%)
	Gov. health facility	27 (22.5%)
	From friends	1 (0.8%)
	Shops	28 (23.3%)
	NGO/INGO workers	15 (12.5%)
	DK	9 (7.5%)
Ease of obtaining condom	Easy	31 (26.1%)
	Difficult	71 (71.6%)
Constraints on obtaining condoms	Too far away	1 (1.3%)
	Expense	3 (4%)
	Fear of being seen	67 (88.2%)
	DK	5 (6.6%)

However, the majority of them (71.6%, N=71) reported that obtaining condoms for sex workers was difficult. The main constraint on obtaining condom was fear of being seen (87%, N=67). The reason for not using condom with their clients was partner's objection (69.2%, N=83) and trust with their partners (15.8%, N=19). The sex workers' condom use pattern was dependent on the type of sex partners, such as irregular clients (55%, N=60), regular clients (33%, N=36) and husbands (11.9%, N=13) (Table 6).

Result of Bivariate Analysis

Bivariate analysis was performed to find the relationship between socio-economic characteristics, knowledge, stigma, access to healthcare facilities, drug use and violence with outcome measures: *condom use*, *with whom condom was used* and *obtaining condom.*

Socio-economic characteristics and the outcome measures

Overall, the proportion of using condoms with all clients increases as the age of the street based female sex workers increases. Among the street based female sex workers whose age is less than 20, zero percent reported using condoms with all of their clients compared to sex workers whose age is between 30-40 years and rate of condom use with all their clients is 33.33% (p=0.0425, Table 7). The proportion of sex workers who reported that obtaining condoms is easy increases as the educational level of sex workers increases from none to secondary (p=0.0007, Table7). The association between socioeconomic characteristics such as marital status and outcome variables of interest however, was not statistically significant. Street based female sex workers who reported having children are more likely to use condom with all their clients compared to sex workers who reported not having children(p=0022, Table 7). Those sex workers whose family livelihood is sex work only are less likely to use condoms with all of their clients compared to sex workers whose family livelihood is sex work combined with other activities (p=<0.0001, Table 7). On the other hand, sex workers whose family livelihood is sex work only are

more likely to use condoms with regular and irregular clients compared to sex workers whose livelihood is sex work combined with other activities (p=0.0001, Table 7).

Table 7: Relationship between socio economic status and outcome measures (condom use, with whom condom was used and condom obtaining)

Condom use and variable categories	**None(N=92) N(% of N)**	**Some(N=12) N(% of N)**	**All (N=16) N(% of N)**	**Total:120 N(% of N)**	**P Value (chi-sq test)**
Age					
<20	22(78.57)	69(21.43)	0	28(23.14)	0.0425
21-30	45(78.95)	6(10.53)	6(10.52)	57(47.10)	
31-40	16(66.67)	0	8(33.33)	24(19.83)	
>41	9(7.44)	0	3(2.48)	12(9.91)	
Marital Status					
Single	24(77.42)	7(22.58)	0	31(25.83)	0.1966
Married	41(75.93)	2(3.70)	11(20.37)	54(45.00)	
Widow/Divorced	27(77.14)	2(5.71)	6(17.14)	35(29.16)	
Presence of children					
No	33(75.00)	9(20.45)	2(4.55)	44(36.36)	0.0022
Yes	59(76.62)	3(3.90)	15(19.48)	77(63.63)	
Livelihood					
Sex work only	65(87.84)	8(10.81)	1(1.35)	74(61.67)	<0.0001
Sex work and other activities	27(58.70)	4(8.70)	15(32.51)	46(38.38)	
Educational level					
None	34(73.91)	3(6.52)	9(19.57)	46(38.33)	0.533
Primary	27(72.97)	5(13.51)	5(13.51)	37(30.57)	
Secondary	30(81.08)	4(10.81)	4(8.11)	37(30.57)	
With whom condom was used and variable categories	**Husband (N=13) N (% of N)**	**Regular clients (N=36) N(% of N)**	**Irregular clients (N=60) N (% of N)**	**Total (N=109) N (% of N)**	**P value (chi-sq test)**
Age					
<20	0	6(21.43)	22(78.57)	28(25.69)	0.7794

21-30	9(16.98)	17(32.08)	27(50.94)	53(48.62)	
31-40	1(5.88)	9(52.94)	7(41.18)	17(15.60)	
>41	3(27.27)	4(36.36)	4(36.36)	11(10.09)	
Marital Status					
Single	0	9(29.03)	22(70.97)	31(28.70)	0.2466
Married	10(21.74)	16(34.78)	20(43.48)	46(42.59)	
Widow/Divorced	2(6.45)	11(35.48)	18(58.06)	31(28.70)	
Presence of children					
No	5(11.36)	11(25.00)	28(63.64)	44(40.37)	0.294
Yes	8(12.31)	25(38.46)	32(49.23)	65(59.63)	
Livelihood					
Sex work only	2(2.70)	28(37.84)	44(59.46)	74(67.89)	0.0001
Sex work and other activity	11(31.43)	8(22.22)	16(45.71)	35(32.11)	
Grade					
None	2(5.13)	12(30.77)	25(64.10)	39(36.11)	0.1797
Primary	2(6.06)	14(42.42)	17(51.53)	33(30.56)	
Secondary	8(22.22)	10(27.78)	18(50.00)	36(33.33)	

Condom obtaining and variable categories	**Easy(N=31) N (% of N)**	**Difficult (N=71) N (% of N)**	**Total (N=102) N (% of N)**	**P Value (chi-sq test)**
Age				
<20	12(42.86)	16(57.14)	28(23.52)	0.7257
21-30	23(41.82)	32(58.18)	55(46.21)	
31-40	10(41.67)	14(58.33)	24(20.1)	
>41	3(25.00)	9(75.00)	12(10.08)	
Marital Status				
Single	15(48.39)	16(51.61)	31(26.50)	0.498
Married	20(39.22)	31(60.78)	51(43.59)	
Widow/Divorced	12(34.29)	23(65.71)	35(29.91)	
Livelihood				
Sex work only	26(36.11)	46(63.89)	72(61.02)	0.2064
Sex work and other activities	22(47.83)	24(52.17)	46(38.98)	
Grade				
None	9(20.00)	36(80.00)	45(38.46)	0.0007
Primary	16(44.44)	20(55.56)	36(30.77)	

Secondary	22(61.11)	14(38.89)	36(30.77)	

Knowledge of HIV/AIDS and outcome measures

Street based female sex workers who had knowledge of HIV infection about healthy looking people were more likely to obtain condoms easily than sex workers who did not have such knowledge (p=0.0001, Table 8). Likewise, street based female sex workers who had knowledge of HIV infection among healthy looking people were more likely to use condoms with all of their clients compared to sex workers who did not have knowledge of HIV infection among healthy looking people (p=0.0326, Table 8). Street based sex workers who had knowledge of HIV transmission through pregnancy had a mean number of children lower than sex workers who did not have such knowledge. The association was statistically significant (p=0.0088, Table 12). Similarly, those sex workers who had knowledge of people dying of HIV/AIDS in the village were more likely to use condoms with all of their clients compared to sex workers who did not have such knowledge (p=0010, Table 8). Further, those street based female sex workers who had knowledge of people dying of HIV/AIDS in the village were more likely to use condoms with irregular clients and their husbands compared to sex workers who did not have knowledge of people dying of HIV/AIDS in the village (p=0.0331, Table 8). For the knowledge index of avoiding transmission of HIV/AIDS, there were 17 questions. For each correctly answered question, one additional point was added to the subject's score. The final scores were based on the sum of the questions answered correctly. The knowledge

index was significantly associated with *condom use*. Street based female sex workers who used condoms all the time had a much higher knowledge index than street based sex workers who used condoms with only some or none of their clients (p=<0.0005, Table 8). The index differences were 3.778 and 4.357 respectively. However, the knowledge index was not different between street based female sex workers who used condoms with only some clients and those who used condoms with no clients.

Table 8: Relationship between knowledge and outcome measures (condom use, with whom condom was used and condom obtaining)

The association between condom use and knowledge index of HIV transmission							
Anova Test					**Tukey Test**		
Condom used	**Knowledge index of avoiding HIV transmission**				**Comparisons significant at the 0.05 level are indicated by *****		
	N	Mean	STD	P-value	Condom use comparison	Difference between mean	Simultaneous 95% CL
None	92	4.163	2.802	<.0005	All : None	3.778	1.921-5.635***
Some	12	3.583	2.778		All : Some	4.357	1.705-7.010***
All	17	7.941	3.848		None : Some	0.579	-1.579-2.738
Association between knowledge index of avoid HIV transmission and with whom condom used							
Condom used with types of clients	**Knowledge index of avoiding getting HIV**				**Comparisons significant at the 0.05 level are indicated by *****		
	N	Mean	STD	P-value	Condom use with clients compare	Difference bet. mean	Simultaneous 95% CL
Husband	13	7.615	3.404		Husb:	3.337	1.311-

				<.0001	re/clients		5.363***
Ire/clients	60	3.533	2.389		Husb: Ire/clients	4.082	2.166-5.997***
Re/clients	36	4.277	2.721		Regu: Ire clients	0.744	-0.575-2.064

Table 8 (cont…)

Condom use and variable categories	**None:92 N(% of N)**	**Some :12 N(% of N)**	**All: 16 N(% of N)**	**Total:120) N(% of N)**	**P Value (chi-sq test)**
Knowledge of healthy looking people with HIV/AIDS					
No	53(82.81)	7(10.94)	4(6.25)	64(52.89)	0.0326
Yes	39(68.42)	5(8.77)	13(22.81)	57(47.10)	
Knowledge of people dying of HIV/AIDS					
No	37(80.43)	5(10.87)	4(8.70)	46(38.01)	0.001
Yes	36(64.29)	7(12.50)	13(23.21)	56(46.28)	
Don't know	19(100)	0	0	19(15.70)	
Awareness of HIV/AIDS infection					
No	5(71.43)	0	2(28.57)	7(5.78)	0.4701
Yes	87(76.32)	12(10.53)	15(13.16)	114(94.21)	
With whom condom was used and variable categories	**Husband (N=13) N (% of N)**	**Regular clients (N=36) N(% of N)**	**Irregular clients (N=60) N (% of N)**	**Total (N=109) N (% of N)**	**P Value (chi-sq test)**
Knowledge of HIV infection on healthy looking people					
No	4(6.67)	20(33.33)	36(60.00)	60(55.05)	0.1576
Yes	9(18.37)	16(32.65)	24(48.98)	49(44.95)	
Knowledge of people dying of HIV/AIDS					
No	3(7.14)	21(50.00)	18(42.86)	42(38.53)	0.0331
Yes	8(16.67)	12(25.00)	28(58.33)	48(44.04)	
Don't know	2(10.53)	3(15.79)	14(73.68)	19(17.43)	
Knowledge of HIV/AIDS transfer from pregnant mother to their children					
No	3(17.65)	8(47.06)	6(35.29)	17(15.60)	0.1116

Yes	9(11.54)	21(26.92)	48(61.54)	78(71.56)	
Don't know	1(7.14)	7(50.00)	6(42.86)	14(12.84)	
Variable categories	**Easy (N=31) N (% of N)**	**Difficult (N=71) N (% of N)**	**Total (N=102) N (% of N)**	**P Value**	
Knowledge of HIV infection among healthy looking people					
No	15(24.19)	47(75.81)	62(52.54)	0.0001	
Yes	33(58.93)	23(41.07)	56(47.46)		

Similarly, street based sex workers who used condoms with their husbands had a much higher knowledge index than street based sex workers who used condoms with regular and irregular clients (p=<0.0001, Table 8). The index differences were 3.337 and 4.082 respectively. The index was however, not different between sex workers who used condoms with regular clients and who used condoms with irregular clients.

Stigma and outcome measures

For the stigma index of avoiding transmission of HIV/AIDS, there were 9 questions, each question weighted as 1 point. For each correctly answered question, one additional point was added to the subject's score. The final scores were based on the sum of the questions answered correctly.

Table 9: Relationship between stigma and outcome measures (condom use)

The association between stigma index and condom use		
Anova Test		**Tukey Test**
Condom use	**Stigma index**	**Comparisons significant at the 0.05 level are indicated by *** **

	N	Mean	STD	P-value	Condom use comparison	Difference between mean	Simultaneous 95% CL
None	92	7.315	1.657	0.0076	All-None	0.3723	-0.736-1.480
Some	12	5.750	2.767		All-Some	1.9375	0.375-3.500***
All	16	7.687	0.946		None-Some	1.5652	0.309-2.821***

The stigma index was significantly associated with *condom used*. Sex workers who used condoms with none of their clients had a higher stigma index than sex workers who used condom with some of their clients. The index differences were 1.657 and 2.767 respectively and were significant (p=<0.0076, Table 9). However, the index was not different between sex worker who used condoms with none of their clients and those who used condoms with all of their clients.

Access to healthcare facilities and outcome measures

Street based female sex workers who reported visiting health care facilities were more likely to use condoms with all of their clients compared to sex workers who did not visit health care facilities (p=0.0041, Table 10).

Table 10: Relationship between access to healthcare facilities and outcome measures (condom use, with whom condom was used and obtaining condom)

Condom use and variable category	**None(N=92) N(% of N)**	**Some N=12) N(% of N)**	**All (N=16) N(% of N)**	**Total(N=120) N(% of N)**	**P value (chi-sq test)**
Visiting heath care facilities					
No	73(83.91)	5(5.75)	9(10.34)	87(71.90)	0.0041
Yes	19(55.88)	7(20.59)	8(23.53)	34(28.09)	

With whom condom was used and variable category	Husband (N=13) N (% of N)	Regular clients (N=36) N(% of N)	Irregular clients (N=60) N (% of N)	Total (N=109) N (% of N)	P value (chi-sq test)
Visiting heath care facilities					
No	2(3.57)	16(28.57)	38(67.86)	56(65.88)	0.0197
Yes	6(20.69)	10(34.48)	13(44.83)	29(34.12)	
Obtaining condom and variable categories	**Easy (N=31) N (% of N)**	**Difficult (N=71) N (% of N)**	**Total (N=102) N (% of N)**	**P value (chi-sq test)**	
Visiting heath care facilities					
No	22(39.29)	34(60.71)	56(62.22)		0.1253
Yes	19(55.88)	15(44.18)	34(37.78)		

Likewise, these sex workers who reported visiting health care facilities were more likely to use condoms with their husbands and regular clients compared to sex workers who did not visit health care facilities (p=0.0197, Table 10). When analyzed a relationship between livelihood of street based female sex workers and visiting healthcare facilities, it was found that, among street based female sex workers whose family livelihood was sex work only were less likely to visit healthcare facilities than sex workers whose family livelihood was sex work combined with other activities. The association was statistically significant (p=0.0106, Table 12)

Drugs use and outcome measures

Among sex workers who reported using drugs in the past 12 months, none used condoms with all of their clients compared to 18.18% of sex workers who did not use drugs in the past 12 months. The association was statistically

significant (p=0.0110, Table 11). There was however, no association between drugs use in the past 12 months and other outcome measures *with whom condom used* and *obtaining condoms.*

Table 11: Relationship between drug use and outcome measures (condom use)

Condom use and variable category	None (N=92) N(% of N)	Some (N=12) N(% of N)	All (N=16) N(% of N)	Total (N=120) N(% of N)	P value (chi-sq test)
Drugs used in the past 12 months					
No	63(71.59)	9(10.23)	16(18.18)	88(73.33)	0.011
Yes	29(90.63)	3(9.38)	0(0.00)	32(26.67)	

Violence and outcome measures

There was no relationship between families or communities assaults among street based female sex workers with the outcome measures used in this study.

Table 12: The relationship between variables of SES, knowledge and violence

Association between livelihood and visiting healthcare facilities						
Variables N(% of N)						
	Visiting heath care facilities			**Total (N=121)**	**Chi-sq**	**P-value**
Family livelihood	Yes	No			6.5320	0.0106
Sex work only	16(27.59)	42(72.41)		58(63.73)		
Sex work and other activity	18 (54.44)	15(45.45)		33(36.26)		
Association between marital status and community assault						
Community assault	Single	Married	Widow/divorced	Total		
No	24(33.33)	34(47.22)	14 (19.44)	72(62.07)	11.795	0.0027
Yes	6 (13.34)	17(38.64)	21 (47.73)	44(37.53)		
Association between livelihood and family assault						
	Livelihood			Total	1.6121	0.2042
Family assault	Sex only	Sex &other				

No	23(31.94)	20(43.48)		43(36.44)		
Yes	49(68.06)	26(56.52)		75(63.55)		
Association between livelihood and community assault						
Community assault	**Livelihood**					
	Sex only	Sex &other		Total		
No	46(64.79)	26(56.52)		72(61.53)	0.8060	0.3693
Yes	25(35.21)	20(43.48)		45(38.46)		
Association between knowledge of HIV transmission through pregnancy and # of children						
	N	Mean	STD		t-test p- value	
No	19	2.3	2.06			0.0088
Yes	85	1.2	1.33			
Don't know	17	1.8	1.71			
Association between having children and client number						
Have children	N	Mean clients	STD		t-test p- value	
No	27	8.3	9.29			0.0307
Yes	90	13.4	13.61			
Association between age and community assault						
Community assault	N	Mean	STD		t-test p- value	
No	72	25.542	7.051			0.0001
Yes	45	31.8	9.9307			

However, sex workers who experienced community assault were more likely to have greater mean age than sex workers who did not experienced community assaults. The association was statistically significant (p=0.0001, Table 12). Overall, the proportion of street based female sex workers who experienced community assault increases as the status of sex workers change from single to married to divorced/widowed (p=0.0027,Table 12).

CHAPTER V: DISCUSSION

Discussion

This study explores condom use patterns among HIV positive street based female sex workers in Nepal. The relationships between socio-economic status, knowledge, stigma, violence, access to medical facilities and drug use with the outcome measures *obtaining condom, condom used and with whom condom was used are* investigated in this study.

Socio-economic status

This study shows that socioeconomic characteristics of street female sex workers affect the pattern of condom use with their clients. The study finds that none of the street female sex workers less than 20 years old use condoms with all of their clients. They have least concerns about the long term risk of HIV and rather worry more about their daily survival (Ober et al, 2010; Eva et al, 2007; William CW et al, 2006; CREHPA report, 2002). Such sex workers are often illiterate (Poudel, 2007; Jha *et al*, 2009) and their education level affects the pattern of condom use. The proportion of sex workers who reported ease of obtaining condoms increased as their education level increased from none to secondary. An increase in health education about the risks of HIV infection would likely be effective in changing attitudes and behaviors of sex workers regarding condom use (Park et al, 2010). Improved education level of sex workers would

likely influence the self-esteem of sex workers (Sterk et al, 2004) which in turn may improve the pattern of condom use.

The marital status of sex workers, however, is not associated with outcome variables of interest. Least concern about their marital status, female sex workers are most often considered disease free and virgins by their clients and frequently refuse to use condoms (Singh *et al*, 2005). Many female sex workers do not have children (Jha et al, 2009). Our findings show that street based female sex workers who reported having no children are less likely to use condom with their clients compared to sex workers who reported having children. Previous studies have found that the sex workers with greater family responsibilities are often engaged in unprotected sex due to lack of other employment opportunities (Eva et al, 2007; William CW et al, 2006). They do not have power to negotiate safer sex (Jha *et al*, 2009). Generally, sex workers who cannot support their daily livelihood from sex work are engaged in other activities, such as labor or agriculture. Surprisingly, street sex workers whose livelihood is supported by other activities are less likely to use condoms with regular and irregular clients as compared to sex workers whose livelihood is derived from street sex only. These sex workers -perhaps due to inadequate resources from daily wages to support their families- often engage in sex work clandestinely (unlike other sex workers who are dependent only on street sex and openly engaged in it) and are subject to their clients' discretion for condom use. (Poudel et al, 2000, Karandikar et al, 2010). Previous research indicate that those girls who are involved clandestinely in sex work are often rejected by their

families or ostracized by the community members, either due to suspicion of infidelity or other reasons (Karandikar et al, 2010). Studies conducted in Nepal show that female sex workers who face discrimination in the family and within the community live in absolute poverty and may provide unprotected sex in return for money or gifts, and may not consider themselves to be prostitutes (Furber *et al*, 2002; Poudel, 2007; Jha *et al*, 2009). Such sex workers are believed to be in the hidden population because of the difficulty of reaching them due to the remote geographic location or due to their covert sexual activities (UNGASS country report, 2008). All these findings imply that poverty, poor family and social supports, and illiteracy remain the main issues with regard to unprotected sex among street based female sex workers in Nepal. Empowerment based HIV prevention intervention, like the Sonagachi project of West Bengal, India, may contribute to lowering HIV/AIDS infection.

Knowledge

This study finds that the knowledge on HIV/AIDS among street based sex workers affect the pattern of condom use. Consistent with previous studies with high risk groups (Lau et al, 2002; Davis et al, 2009), there is a relationship between knowledge index on HIV/AIDS and outcome variables of interest. The knowledge index of avoiding transmission of HIV/AIDS is lower among street based female sex workers. Lower knowledge index is associated with not using condoms with all the clients, higher mean number of children or unaware of HIV infection on healthy looking person among street based female sex workers.

These findings imply that street based female sex workers are less likely to use condoms with their clients due to poor knowledge of HIV/AIDS, be it acquisition or transmission from one person to another. This is consistent with previous studies which concluded that better knowledge of HIV/AIDS transmission among female sex workers is required for consistent condom use (Dandona et al, 2005; Park et al, 2010). This is because female sex workers often perceive their clients as disease free and do not use condoms (Comer et al, 2000; Hoffman et al, 2000). Several sources have indicated that HIV/AIDS awareness alone does not predict safer sex practices. For example, although clients know that monogamy is a protective strategy, they visit sex workers who are known to have many sex partners, implying that awareness is necessary but insufficient to change behavior (Wee, et al, 2004). Analogous to the previous studies, this study also finds that there is no association between awareness of HIV/AIDS infection and condom use pattern among the sex workers. Therefore, in order to increase the rate of condom use among the sex workers with their clients, comprehensive HIV/AIDS education and awareness programs with detailed information on risks of unprotected sex might change the risk behaviors of sex workers. Further, an inquiry into the relationship between street based female sex workers and different types of clients may be necessary to develop effective strategies to increase the rate of condom use.

Stigma

This study shows that stigma among street based female sex workers affects the pattern of condom use with their clients. Sex workers with a higher stigma index do not use condoms with any of their clients. They hide their HIV status during sexual activities. This finding is consistent with previous studies that sex workers hide their identity and diseases and further risk their health by engaging in risky sexual behaviors (Wong et al, 2011). Our studies find that female sex workers wanted to conceal their disease from their families, which affected their willingness to obtain condoms and insist on their use. Still, it is a taboo to talk about sexuality in Nepalese society, and sex workers feel embarrassed to talk about HIV/AIDS (Poudel et al., 2008). Their friends and relatives may acquire HIV infection from them and their continuous engagement in risky sexual behavior may have spread the disease to the general population (Ekstrand et al, 2011).

Violence

This study finds that violence does not have significant affect on the pattern of condom use among street based female sex workers in Nepal. Family assault by husbands, parents or the siblings is not associated with outcome measures. One study shows that the sex work profession is tolerated by some family members to obtain support for the entire family livelihood (Sarkar et al, 2008). Therefore, there is no relationship between family assault and pattern of condom use. Community assault, however, is more prevalent among

divorced/widowed street based female sex workers. This is because most of the divorced/widowed sex workers often lack family or social protection, primarily due to their "open" sexual profession, and are vulnerable to community assaults. In such situations, their clients are the only source of their safety (Go et al, 2011; Panchanadeswaran et al, 2008; Teitelman et al, 2007; Lescano et al, 2006; Lichtenstein, 2005; Comer et al, 2000). The studies conducted by Lichtenstein, 2005 and Teitelman et al, 2007 show that female sex workers seek continuous psychological and moral supports from their clients for their safety. This implies that condom use pattern is often based on fear and emotional factors. Such factors may thwart HIV prevention intervention and lower the rate of condom use. Therefore, investigation into the pattern of condom use based on the sex worker-client emotional relationship on condom use negotiation may increase the rate of condom use by the street female sex workers with their clients.

Access to healthcare facilities

This study shows that access to health care facilities by street based female sex workers affect the pattern of condom use with their clients. Female sex workers who visit health care facilities are more likely to use condoms with all of their clients. Government-supplied free condoms are highly accessible in hospitals in Nepal and those who visit the hospitals are likely to get free condoms and adopt safer sex practices with their husbands and their clients (UNAIDS/FHI, 2007). This finding is supported by our study that street based female sex workers who visit healthcare facilities use condoms consistently with their

husbands and clients unlike those who do not visit. Livelihoods of sex workers also influence the healthcare visit and condom use. This study finds that female sex workers whose livelihood is only street sex visit healthcare facilities less frequently than that of sex workers whose family livelihood is street sex work in addition to other activities. They reported that this is due to stigma of being HIV positive and fear of being seen by others in the health care facilities. This indicates that maintaining confidentiality of sex workers in hospitals is very important in encouraging their rate of visiting hospitals and reducing their stigma (UNAIDS/NCASC 2006). Further, empowering street based female sex workers through awareness programs may boost their willpower, reduce their fear and increase their rate of health- care visits (Ghimire et al., 2009; Karandikar et al, 2010). Such measures would strengthen their rate of condom use with their clients in Nepal.

Drug use

This study finds that drug use by female sex workers affects condom use patterns. Among sex workers who reported using drugs, none used condoms with all of their clients. Previous studies show that drug use is the major risk factor for unprotected sex with clients (Poudel KC et al, 2004; Comer et al, 2000; Lescano et al, 2006; Dandona et al, 2006, Mai et al, 2010). Sex workers often use alcohol and drugs and engage in risky sexual behavior such as unprotected sex due to financial worries, lack of family support and clients' pressure (Comer et al, 2000; Lescano et al, 2006; Dandona et al, 2006, Mai et al, 2010). Reducing

the threat of violence and empowering sex workers through awareness programs may lower drug use and facilitate condom use, which would ultimately help reduce HIV/AIDS transmission risk in the sex industry and the general population (Shannon et al, 2010). If the risk behaviors of female sex workers such as drug use or alcohol consumption are not addressed, the pattern of condom use with their clients is not likely to improve.

Limitation of this study

While this study provides an overview of patterns of condom use among street based female sex workers in Nepal, the convenience sample of HIV positive street based female sex workers in this study may not be representative of the larger sex worker community in Nepal. There is lack of reliable data availability from the government offices to find the exact number of street female sex workers involved in street sex. Such information is important to understand the spread of HIV epidemic in Nepal. Despite these limitations, the study provides important insights into patterns of condom use among HIV positive street based female sex workers and highlights their risk behavior and vulnerabilities resulting from unsafe sex practices, poor socio-economic support and poor access to health care facilities in Nepal.

Recommendation

These results need to be replicated in larger cross sectional and longitudinal studies in order to better understand the spread of HIV epidemic by

street based female sex workers, and for effective future HIV intervention in Nepal.

Conclusions

This study finds that self efficacy is important for consistency of condom use and for this reason, the empowerment of sex workers will remain an important prevention measure for Nepal. However, improving self efficacy of women through empowerment for risk behavior change may not be enough to affect street sex workers condom use patterns with their clients. Perceived barriers of sex workers need to be given due importance for HIV intervention. For this, the impact of social and economic factors on sex workers, as well as the effect of relationship patterns with their different partners, must be considered in future interventions. It is necessary to design interventions that provide appropriate educational materials on HIV/AIDS aimed at improving the knowledge of both street based female sex workers and their clients.

This study has assessed patterns of condom use among HIV positive street based female sex workers in Nepal. HIV/AIDS prevention and treatment are seriously challenged by risky sexual behavior, poor access to health care facilities, stigma, poor socio-economic status and violence among street based female sex workers. The results indicate that HIV positive street based female sex workers in Nepal do not consistently practice a major preventive safe practice, i.e. the use of condoms with partners and/or clients and thus may be a potential bridging group for the transmission of HIV/AIDS to the general

population. HIV/AIDS education and awareness programs must recognize the specific needs of this group of women and target specific messages in a socially and culturally sensitive way to encourage their involvement.

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Appendix A

Survey Questionnaire

Needs Assessment among HIV Positive Street Based Female Sex Workers in Nepal

Emory University/Watch-Nepal

SERIAL NUMBER OF QUESTIONNAIRE: ----------

INFORMED CONSENT

Namaste! My name is ……..and I am here from Emory University/Watch-Nepal to collect data for Needs Assessment survey about HIV/AIDS. We are conducting this survey in Kathmandu, Pokhara, Biratnagar and Ruphendahee in Nepal. We are seeking your volunteer participation and we wish, with your permission, to interview you. We are also reimbursing your costs for travel and lunch of Nepali currency 140 rupees (USD 2/-). Be assured that all the information we collect will be used to help us fight against AIDS in your community and the country. With your information we will try to address your medical needs by mobilizing resources from clinics, hospitals and ministry of health. We will be sampling a total of 120 individuals. Some of the questions asked, are of a sensitive nature but, please note that your name will not be recorded in the questionnaire, and any detail related to your privacy will be kept confidential. It will not be used in relation to registration, or any other services.

Participation in this survey is voluntary. You can choose not to answer any individual question or all of the questions. For any future correspondence, you may contact us at Watch-Nepal,

RESPONDENT AGREED TO BE INTERVIEWED……1	RESPONDENT DID NOT AGREE TO BE INTERVIEWED……2
PROCEED	**END**

IDENTIFICATION

DISTRICT.....

CITY (Biratnagar = 1, Kathmandu = 2, Pokhara 3, Rupendehai 4).....

WARD NUMBER.....

SERIAL NUMBER OF INTERVIEWEE.....

AGE OF THE INTERVIEWEE .....

INTERVIEWER (NAME): _____ INTERVIEW DATE: _____ / _____ /

INTERVIEW STARTING TIME: Hour……., Minute……..

SECTION I: BACKGROUND CHARACTERISTICS

Q.N.	QUESTIONS	CODING CATEGORIES	SKIP
101	How old are you?	Age (completed years).....	
102	What is your family's main source of livelihood?	Agriculture .....1 Business/Trade .....2 Job/Service (regular) .....3 Labor/Wage earning.....4 Others _____ 96 (Specify)	
103	In which ethnic/caste group do you belong?	Brahmin.....1 Chhetri/Thakuri.....2 Rai/Limbu/Magar/Gurung/Tamang/ Sherpa.....3 Damai/Kami/Sarki/Pode/Chamar/ Satar/Dusad/Paswan.....4 DK .....98 Others _____96 (Specify)	
104	What is the highest level/grade you completed?	Grade …….	
105	How long have you been living in this place? **(RECORD IN MONTHS)**	Months..... DK..... 98	
106	What is your current marital status?	Currently married.....1 Never married.....2 Divorced/separated .....3 Widow/ Widower.....4	→ 201
107	How old were you when you first married?	Age (in completed years) ..... DK 98	
108	How many sons and daughters have you given birth to?	Number of sons..... Number of daughters ..... Total number of children	
109	Have you/your husband ever used anything or tried any way to delay or avoid getting	Yes .....1 No.....2	

	pregnant?		

SECTION II: MALE & FEMALE CONDOMS

201	Have you ever heard of male condoms?	Yes.....1 No .....2 →	301
202	What do you think condoms are used for? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Protects against STI/HIV/AIDS..... 1 Pretect from STI..... 2 Prevents pregnancy ..... 3 Family Planning ..... 4 DK..... 98 Other_____ 96 (Specify)	
203	Where can you/a person get condoms from?	Pharmacy ..... 1 Government health facility..... 2 At the market..... 3 From friends..... 4 At the shop..... 5 Community health worker ..... 6 NGO/NGO worker..... 7 DK..... 98 Other_____96 (Specify)	
204	How easy is it to obtain a condom from this place?	Easy ..... 1 → Difficult ..... 2 It depends 3	301
205	What are the constraints to obtaining a condom?	Too far away (geographical access) 1 It's expensive .....2 Time constraint.....3 Not available ..... 4 Fear of being seen .....5 Health worker's attitude.....6 DK..... 98 Other_____96 (Specify)	

SECTION III: SEXUAL RISK BEHAVIOUR

301	In the past months, how many clients have you seen?	Number …… DK.....98	
302	Have you had sex in the past month?	Yes..... 1 No..... 2 DK.....98	
303	In the last month how many of your clients used condom?	None.....1 → 305 Some.....2 All..... 95	
304	With whom you used condom?	Husband..... 1 Regular clients..... 2 Transactional clients.....3 Non-regular clients..... 4	
305	Why condom was not used?	Not available.....1 Too expensive.....2 Partner objected.....3 Don't like them.....4 Used other contraceptive..... 5 I trust my partner..... 6 Didn't think it was necessary..... 7 Don't know what condom is..... 8 DK..... 98 Others.....96 (Specify)	

SECTION IV: SEXUAL ABUSE, DRUG USE AND OTHER RISK BEHAVIOR

401	Have you ever been forced to have sex?	Yes ..... 1 No ..... 2 →	405
402	Have you been forced to have sex in the past 12 months?	Yes ..... 1 No ..... 2 →	405
403	How many times were you forced to have sex in the past 12 months?	Times..... DK/No response..... 98	
404	Who forced you to have sex last time and who was it? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Non local Nepali.....1 Person from local community.....2 Army/Police.....3 Humanitarian workers.....4 Sex workers.....5 DK.....98 Others.....96 (Specify)	
405	**DO NOT CONSIDER DRUG INJECTED/TAKEN FOR MEDICAL TREATMENT OF AN ILLNESS)** Some people use drugs, such as *Ganja, Bhang*, Heroine, Crack or other drugs for non medical purpose. Have you ever taken of such drugs?	Yes..... 1 No 2	
406	Have you taken any of such drugs in the past 12 months?	Yes..... 1 No 2	
407	Some people take drug in various ways. Of the following, in which way(s) have you taken drugs in the past 12 month? 1. Injection 2. Inhalation	**NO** **Yes** 1. Injection 1 2 2. Inhalation 1 2 3. Smoking 1 2 4. Orally 1 2	If 1 no, Move

	3. Smoking 4. Orally 5. Other _____ (Specify)	5. Other 1 2	**501**
408	**ASK Q408-414 ONLY IF THE RESPONDENT HAS TAKEN DRUGS THROUGH INJECTION. OTHERWISE GO TO Q501)** Have you used same syringe more than once while injecting drugs in the past 12 months?	Yes ..... 1 No .....2 →	410
409	At the last time you injected drugs with a syringe used by yourself; did you clean the syringe before its re-use? If yes, how did you clean it the last time?	Did not clean ..... 0 Cleaned, with cold water ..... 1 Cleaned, by boiling..... 2 Cleaned, by bleaching…….3 Cleaned, with alcohol.... ……4 Cleaned, with saliva ..... 5 DK/No response..... 98 Other_____96 (specify)	
410	Have you shared a syringe (given or taken used syringe) with other people/friends in the past 12 months?	Yes..... 1 No 2	
411	At the last time you injected drugs in group, how many people/friends shared the same syringe?	Number of people..... DK/No response..... 98	
412	At the last time you shared a syringe with your friend(s), did you clean the syringe used by others before you used it? If yes, how did you clean it the last time?	Did not clean ..... 0 Cleaned, with cold water .....1 Cleaned, by boiling..... 2 Cleaned, by bleaching..... 3 Cleaned, with alcohol .....4 Cleaned, with saliva ..... 5 DK/No response..... 98 Other_____ ..... 96 (Specify)	

413	Among your friends with whom you shared syringe in the past 12 months, was any person from outside the surrounding community?	Yes..... 1 No 2	
414	Among your friends with whom you shared syringe in the past 12 months, was any person from the surrounding community?	Yes..... 1 No 2	

SECTION V: SEXUALLY TRANSMITTED INFECTIONS

501	Have you heard about the diseases that can be transmitted through sexual intercourse?	Yes..... 1 No ..... 2→	504
502	If a man has a sexually transmitted disease, what symptoms might he have? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Genital sores/ Ulcers/Blister ..... 1 Genital discharge/ Dripping..... 2 Burning sensation on urination..... 3 Redness/ Inflammation in genital area ....4 Genital warts.....5 Genital itching ..... 6 Blood in urine ..... 7 Swelling in groin area..... 8 DK..... 98 Other_____ ..... 96 (Specify)	
503	If a woman has a sexually transmitted disease, what symptoms might she have? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Genital sores/ Ulcers/Blister..... 1 Genital discharge/Dripping..... 2 Burning pain on urination ..... 3 Redness/ Inflammation in genital area ..... 4 Genital warts ..... 5 Genital itching ..... 6 Blood in urine 7	

		Swelling in genital area ..... 8 Abdominal pain ..... 9 Foul smelling discharge ..... 10 Hard to get pregnant/ have a child ..... 11 DK..... 98 Other_____ ..... 96 (Specify)	
504	Have you had following symptoms during the past 3 months? 1. Genital sores/ Ulcers/Blister 2. Genital discharge? 3. Burning pain on urination? 4. Redness/ Inflammation in genital area? 5. Genital warts? 6. Genital itching? 7. Blood in urine? 8. Swelling in genital area/Groin area? 9. Abdominal pain? 10. Foul smelling discharge?	**Yes No DK** 1. Genital sores…… 1 2 98 2. Genital discharge 1 2 98 3. Burning pain……1 2 98 4. Redness…… 1 2 98 Genital warts……1 2 98 6. Genital itching……..1 2 98 7. Blood in urine…… .1 2 98 8. Swelling in genital… 1 2 98 9. Abdominal……1 2 98 10. Foul smelling ……1 2 98	
505	Last time when you had such symptoms, did you go for treatment?	Yes..... 1 No..... 2 →	601
506	Where did you go to seek treatment?	**Public sector** Government hospital ..... 1 Government health facility/Clinic .....2 Government mobile clinic.....3 Other (Government) _____ ..... 95 (Specify	

		Private Sector Private hospital/ Clinic..... 4 Pharmacy..... 5 Private medical doctor..... 6 NGO clinic/mobile clinic ..... 7 Traditional healer ..... 8 Other private _____ ..... 94 (Specify)	

SECTION VI: KNOWLEDGE, OPINIONS AND ATTITUDES TOWARD HIV/AIDS

601	Do you hear/see/learn about HIV/AIDS in the past 12 months? **(PROBE AND CONFIRM)**	Yes..... 1 No .....2 →	603
602	From where (whom/which mode) did you usually hear/see/learn about HIV/AIDS in the past 12 months? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Radio..... 1 TV ..... 2 Newspaper..... 3 Government health facility/workers .. 4 NGO/NGO worker..... 5 Humanitarian agency/worker..... 6 Community health worker/Volunteer 7 Friend/Relative..... 8 School/Teacher..... 9 Poster/pamphlet..... 10 Street drama ..... 11 Bill-board/hoarding board..... 12 Cinema hall ..... 13 DK..... 98 Other_____ ..... 96 (Specify)	
603	Do you think there is more risk of being infected with HIV/AIDS in your village or in the cities ?	Village..... 1 Cities..... ……..2 DK..... 98	

604	Do you know anyone who has died of AIDS in Your village?	Yes..... 1 No ..... 2 DK..... 98	
605	Do you know anyone who has died of AIDS in The cities?	Yes..... 1 No ..... 2 DK..... 98	
606	Can HIV virus be transmitted from one person to another through the following mode/activities? 1. Having sex with multiple partners? 2. Having sex with sex workers? 3. Not using condom during casual sex? 4. Through homosexual contact? 5. Taking untested blood? 6. Through kissing? 7. Through mosquito bites? 8. Sharing sharp objects like razor blades with infected persons? 9. Sharing unsterilised/reusing needles? 10. Sharing toilets with infected persons? 11. Sharing eating utensils/foods with infected persons?	**Yes No DK** 1. Sex with multiple 1 2 98 2. Sex with prostitutes 1 2 98 3. Not using condom 1 2 98 4. Homosexual contact 1 2 98 5. Untested blood 1 2 98 6. Kissing 1 2 98 7. Mosquito bites 1 2 98 8. Sharp objects 1 2 98 9. Unsterilised/reusing 1 2 98 10. Sharing toilets 1 2 98 11. Sharing utensils/foods 1 2 98	
607	Is there any thing a person can do to avoid getting HIV/AIDS?	Yes..... 1 No ..... 2 → DK..... 98 → 609	
608	What can a person do to avoid getting HIV/AIDS? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Abstain from sex .....1 Use condom ..... 2 Limit sex/Stay faithful to one partner.3 Limit number of sexual partner..... 4 Avoid sex with prostitutes..... 5 Avoid sex with person who have many partners ..... 6 Avoid sex with MSM.....7 Avoid sex with person who inject drug intravenous ..... 8 Avoid blood transfusion..... 9	

		Avoid injection..... 10 Avoid sharing razors/ blades..... 11 Avoid kissing ..... 12 Avoid mosquito bites ..... 13 Take medicine..... 14 Seek protection from traditional practitioners ..... 15 DK..... 98 Other_____ ..... 96 (Specify)	
609	Is it possible for a healthy-looking person to have the HIV virus?	Yes..... 1 No ..... 2 DK..... 98	
610	Can a pregnant woman with HIV/AIDS, transmit the virus to her unborn child during pregnancy?	Yes..... 1 No ..... 2 DK..... 98	
611	Can a pregnant woman with HIV/AIDS transmit the virus to her baby during delivery?	Yes..... 1 No ..... 2 DK……..3	
612	Can a woman with HIV/AIDS transmit the virus to her baby during breastfeeding?	Yes..... 1 No ..... 2 DK..... 98	
613	Where would you like us to talk about HIV/AIDS? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Do not want from anything ..... 0 Radio..... 1 TV ..... 2 Newspaper..... 3 Government health facility/workers . 4 NGO/NGO worker..... 5 Humanitarian agency/worker..... 6 Community health worker/Volunteer 7 Friend/Relative..... 8 School/Teacher..... 9 Poster/pamphlet..... 10 Street drama ..... 11 Bill-board/hoarding board..... 12 Cinema hall ..... 13 DK..... 98	

		Other_____ ..... 96 (Specify)	
614	If a member of your community got infected with the virus that causes AIDS, would you want it to remain a secret?	Yes (Keep it secret)..... 1 No ..... 2 DK..... 98	
615	If a female member of your family became sick with the virus that causes AIDS, would you be willing to care for her in your own household?	Yes..... 1 No ..... 2 DK..... 98	
616	If a male member of your family became sick with the virus that causes AIDS, would you be willing to care for him in your own household?	Yes..... 1 No ..... 2 DK..... 98	
617	If a person got infected with the virus that causes AIDS, should he/ she be allowed to stay in his/her work place?	Yes..... 1 No ..... 2 DK..... 98	
618	Can the green vegetables sold by a shopkeeper infected with HIV be fresh/safe?	Yes..... 1 No ..... 2 DK..... 98	
619	What you think, should a teacher infected with HIV be allowed to continue teaching in school?	Yes..... 1 No ..... 2 DK..... 98	
620	Would you willing to participate in HIV awareness programs if launched in your community?	Yes..... 1 No ..... 2 DK..... 98	
621	Would you willing to send your other family	Yes..... 1 No 2	

	members to participate in HIV awareness programs if launched in your community?	DK..... 98	
622	Should young adolescents be taught on how to use condoms?	Yes..... 1 No ..... 2 DK..... 98	

VII : DOMESTIC VIOLENCE

701	Now I am going to talk something different. Some people may have experienced domestic violence such as verbal assault (threat to death, economic exclusion, exclusion from the family etc.) and physical assault such as beating. Have you experienced any of such assault from your family member(s) in the past 12 months?	Yes..... 1 No ..... 2 DK/No response..... 98	
702	Have you experienced any of such assault from your community people in the past 12 months?	Yes……1→ No……..2 DK/No response……98→	703 **801**
703	How many times did you experience such verbal or physical assault in the past 12 months?	Times ..... Very often/frequently ..... 97 DK/No response..... 98	

704	What could be the reasons to assault you verbally or physically?	Due to my diseases HIV……1 Due to my clients visit……2 My work offends parents prestige..3 My work offends husband prestige..4 My parents are drunkard……..5 My husband is a drunkard……6 DK/No response……98	
705	Who in particular assault you verbally or physically?	Husband……..1 Parents……2 Siblings…….....3 Community people……4 All……5 DK/No response……98	
706	Do any one protect you from such assaults?	Yes……..1 No……2	
707	Who protect you from such assaults?	Husband……1 Parents……..2 Siblings……..3 Community people……4 Police……..5 NGOs……6 Nobody……7	

SECTION VIII: KNOWLEDGE AND ACCESSIBILITY OF SERVICES

801	Do you know a place where a HIV positive person can seek medical treatment?	Yes..... 1 No ..... 2→	806
802	Where can a HIV positive people can seek medical treatment? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	**Public sector** Government hospital .....1 Government health facility/Clinic .... 2 Government mobile clinic.....3 Other (Government) ..... 95 (Specify **Private Sector** Private hospital..... 4 Private clinic..... 5 Pharmacy..... 6 Private medical doctor..... 7 Private/NGO mobile clinic ..... 8 NGO/INGO clinic..... 9 Traditional healer ..... 10 DK..... 98 Other_____ ..... 96 (Specify)	
803	Do these health services exist locally and/or other places? **(MULTIPLE ANSWER POSSIBLE. PROBE AND RECORD ALL REPORTED)**	Locally ..... 1 Outside local place .....2 DK..... 98	
804	Are these health facilities accessible to you ?	Yes.....1 No.....2 →	806
805	If yes, do you visit often for medical treatment?	Yes.....1 No.....2	
806	If no, why do you not visit often for medical treatment?	Stigma..... 1 Doctors harassment..... .2 Afraid of result.....3 Costly.....4	

		Lack of interest…… 5 Feel it not necessary…….6 Distance……...7	
807	Do you seek family support when you are stigmatized?	Yes……..1 No……2	
808	If no, why you don't take family support?	Family avoid/hate me……1 To protect family prestige……..2 Want to conceal my disease……3	
809	Do you seek organizational support when you are stigmatized?	Yes……1 No……2	
810	If no, why you do not seek organizational support?	Organization do not support me……1 Feel it is not necessary……..2 No access to organization……3 Organization avoid me……..4	

INTERVIEW COMPLETION TIME: HOURS……;
MIN……

THANK YOU FOR TAKING TIME TO ANSWER TO OUR QUESTIONS, WE APPRECIATE YOUR HELP!

Appendix B

Story of Samjhana: A case study of an HIV/AIDS victim in Nepal

Samjhana, a mother of a 3 years old child (name changed) is 22 years old now. She hails from Rolpa, a remote district in western Nepal. In 2004, she fled her hometown along with her parents, fearing Maoist atrocities and the army. For their survival and security, they settled in the vicinity of Pasupatinath temple in Kathmandu. Samjhana had to discontinue her education due to dire financial stringency. Her father decided that she be married and lead an independent life. She got married at the age of 16 and after giving birth to a child, her husband abandoned her. His whereabouts is unknown till date. She is now facing a very difficult situation: she can neither return to her parental home, nor get any support from her husband's family. The entrenched culture and tradition of the typical Hindu family constrains her to decide what she wishes. But now she took a bold decision: to stand on her own feet and send her child to school. The unemployment situation in Kathmandu has worsened, and the prospect for a job dims for Samjhana. Kathmandu being already over-flooded with educated and skilled people, a rural girl without skills and higher qualification could not find any job in this city. And even to get into a low skill job, she lacked backing from influential people. Bribery, nepotism and favoritism are rife in Katmandu. Moreover, the city is overcrowded by domestic migrants already limiting the scope for people like Samjhana to find any jobs.

In her last ditch efforts, she found a job in street-based restaurant in Kathmandu where she was forced to go into prostitution. Among the group of restaurant workers, she is physically the most attractive women and a source of lucrative money for her manager. Her regular clients are mostly Army and police personnel. Unaware of safe sex practice and compelled by her clients to have sex without condoms, she gradually contracted HIV/AIDS. She is now getting ARV treatment from the government. Now, having contracted the deadly disease, she has lost all her hopes in her life including educating her child. She has just one wish: to see her parents. But the stigma associated with the disease and her profession prevents her from venturing out to her parents home, let alone her community where people with HIV/AIDS are socially ostracized. Not sure of what treatment she will receive back in her village, she keeps on pondering "whether or not I should go to see my parents; what if they expelled me?"

Apart from her regular clients—Army and Police—scores of other non-regular clients including drivers and college students, are attracted to her and are likely to contract the diseases. Even though Samjhana knows she has HIV/AIDS; she

is forced to have sex with these men without condom. This is because her clients tell her that they enjoy more without condoms and are willing to pay her more.

Now she is getting weaker and frail. This is compounded by opportunistic infection such as TB and Anemia. And the cost of her treatment is soaring. After catching the diseases, she is not able to work longer hours and thus her earning has dipped. Her bottom-line concerns are two: "What will happen to the future of my child? How will I afford my treatment with paltry earning?"

Samjhana is not alone in this business, there are large number of street-based female sex workers in Kathmandu who are responsible for spreading the diseases which when unchecked could potentially inflict a large population leading to a HIV/AIDS pandemic in Nepal.

Appendix C

To April 21st, 2010

Global Field Experience (GFE) Committee

Rollins School of Public Health

Emory University

Atlanta

Subject: Supporting and guiding Mr. Parangkush Subedi for his research in Nepal

Dear Sir/Madam,

It is my pleasure to write a support letter to Mr. Parangkush Subedi for his research in this summer in Nepal. I am Sarmila Shrestha, a Humprey fellow at Rollins School of Public Health at Emory University. I am a coordinator of Women Acting Together for Change (WATCH), a national nongovernmental and non-profit organization based in Kathmandu, Nepal. My organization has been actively involved for HIV/AIDs prevention program, community development programs and other awareness programs targeting to the poor and marginalized in Nepal for the past 17 years.

I myself and our organization is pleased to assist and guide to Mr. Subedi for his research.

Please let me know if I need to provide any more information.

Sincerely

Sarmila Shrestha (Humphrey Fellow, Rollins School of Public Health)

On Behalf of

WATCH, Kathmandu, Nepal

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