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An Exploration of Social Exclusion and Risky Sexual Behaviors Amongst Transgender Women in Karachi, Pakistan

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An Exploration of Social Exclusion and Risky Sexual Behaviors Amongst Transgender Women in Karachi, Pakistan

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2012

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An abstract of

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University

in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education

2016

Abstract

An Exploration of Social Exclusion and Risky Sexual Behaviors
Amongst Transgender Women in Karachi, Pakistan
By Sharmeen Hussain

Background: There is a high prevalence of social exclusion and risky sexual behaviors amongst transgender women in Pakistan. It has been found that sex work is a common career path for this population. Further, this population has shown to have a higher prevalence of HIV than other high-risk populations, such as male and female sex workers. This study aims to describe transgender women in Pakistan based on social exclusion and involvement in risky sexual behaviors. Additionally, it aims to examine whether social exclusion factors are associated with adoption of risky sexual behaviors.

Methods: Researchers utilized a cross-sectional study design to survey a sample of 82 transgender women in Karachi, Pakistan. All surveys were verbally administered by an interviewer, and questionnaires consisted of the following sections: demographics, perceived attitudes, past experiences, access to resources and support, risky sexual behaviors, HIV/AIDS, and STIs. Analysis included calculating descriptive statistics for all items on the survey, Spearman's Rho correlations, and logistic regression models, linear regression models, and chi-square tests of association to test for associations between predictor and outcome variables.

Results: All study participants reported ever-involvement in sex work, with 90.24% reporting current involvement. Number of sex partners over the past 90 days ranged from 1-895. A large majority of participants stated that others found being transgender to go outside Islamic principles, and that they had felt excluded because of their gender identification. Most participants faced physical abuse (79.27%), sexual harassment (96.34%), and sexual violence (75.61%). Seeking medical attention and social support was not a problem for most, whereas finding employment and pursuing an education was. The overall linear regression model with condom use each time was significant, and showed a significant association with past experiences ($p=0.03$). Chi-square tests showed the highest number of associations between past experiences items and risky sexual behaviors.

Conclusions: This study adds to the current literature regarding social exclusion and risky sexual behaviors amongst transgender women. Although this study did not find sufficient evidence to show an association between social exclusion and risky sexual behaviors, this is an association that should be further explored in the future.

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List of Abbreviations

AIDS: Acquired Immunodeficiency Syndrome

EMRO: Eastern Mediterranean Regional Office of World Health Organization

HIV: Human Immunodeficiency Virus

HSW: Hijra Sex Worker

SCT: Social Cognitive Theory

STI: Sexually Transmitted Infection

UNDP: United Nations Development Programme

WHO: World Health Organization

Definition of Terms

Access to Resources and Support: access to resources, such as healthcare and education, and social support

Chela: offer older hijras their earnings and loyalty in return for protection and a home

Dera: homes or dwellings where two or more hijras reside

Guru: authoritative, older hijras. Offer protection and home for younger hijras in exchange for loyalty and earnings

Hijra: umbrella term encompassing individuals who are intersex, who are male by biological sex but have been castrated, or who are male by biological sex but identify with the female gender

Past Experiences: negative behaviors and actions experienced by participants prior to the study, such as discrimination, harassment, and abuse

Perceived Attitudes: how transgender individuals believe others view them and their gender identification

Risky Sexual Behaviors: behaviors that increase an individual's likelihood of contracting HIV/AIDS/STIs

Social Exclusion: personal and environmental factors that contribute to an individual's separation from society

Transgender Woman: used interchangeably with hijra

Acknowledgements

There are several people who I must thank for their unconditional support and guidance throughout this process. My thesis committee, Dr. Delia Lang and Dr. Eric J. Nehl, who have encouraged me since I first proposed this project to them, and who have been an integral part of each step of this experience. Without you, I would not have been able to come this far.

Dr. Arshad Altaf, at Aga Khan University in Karachi, Pakistan: from my initial email to you discussing my interest in this population, throughout the past year and a half, you have been there to answer every question and to give me insight both into conducting this study and public health in Pakistan. You guided me through the steps that I needed to take in Pakistan, and gave me access to the resources I needed to complete this study. I could not be more thankful, or have asked for a better mentor.

Abid Hanif, my interviewer, who was the initial point of contact, and who sat with me through all the changes and various issues that came up throughout our data collection. My driver, Imam Buksh, who stayed out with me for eight to ten hours a day in the sweltering Karachi summer.

My parents, Qamar and Kanwal Hussain, and my brother and sister-in-law, Shyan and Wardah Hussain: knowing that I will always have your support is what has pushed me through the past two years. Thank you for every piece of advice, every ounce of encouragement, and for swallowing your own fears and apprehensions to let me pursue my dreams, regardless of what corners of the world those dreams took me to. Anna and Daddo, for teaching me how to be courageous and to not let anything hold me back from my dreams. To my Puppa, who always believed in me, and whose advice has always guided me through each decision I make.

Finally, thank you to all of my family and friends who have pushed me, supported me, and carried me through these past two years: this entire journey would have been impossible without you.

Chapter One

Introduction

In recent years, there has been an increasing fight for transgender rights and equality across the globe (S. Baral, Beyrer, & Poteat, 2011). Transgender individuals are at an increased risk for discrimination and negative health outcomes because of their gender identities. Looking specifically at HIV, transgender women have been shown to be at a higher risk than other populations, including transgender men (S. Baral et al., 2011). One explanation for this has been the high risk of HIV transmission associated with frequent, unprotected, receptive anal intercourse which is high in this population (S. D. Baral et al., 2013).

In Pakistan, transgender women are a marginalized and highly stigmatized population commonly referred to as "hijra". Hijra is defined by three categories: intersex individuals, individuals who are male by sex but have been castrated, and finally individuals who are male by sex but identify with the female gender (Ahmed, Yasin, & Umair, 2014). For purposes of this paper, the terms transgender and hijra encompass the three groups mentioned above.

The hijra population has been present in South Asia throughout history. During the Mughal Empire, hijras were often in charge of overseeing harems, and serving as key advisors for rulers (Abbas, Nawaz, Ali, Hussain, & Nawaz, 2014). However, this social position changed during British Colonialism, when hijras began to lose the power and respect they had during the Mughal Empire, and consequently their place in society (Abbas et al., 2014). After being displaced within society, hijras began to face discrimination at home, school, in the work place, and in the religious community (Abbas et al., 2014). After the Mughal Empire, hijras earned their income through performing at weddings and birth rituals, but with increased social exclusion. The main sources of income for hijras are now begging and sex work (Abdullah et al.,

2012). Due to their involvement in sex work, the hijra community constitutes a high-risk population for both HIV and other sexually transmitted diseases(Rehan, Chaudhary, & Shah, 2009).

Significance of the Study

Currently, there is a low prevalence of HIV in Pakistan, however, it is at risk for an outbreak, making it a pertinent public health issue in the country(Baqi, Shah, Baig, Mujeeb, & Memon, 1999). According to World Health Organization (WHO), the HIV epidemic in Pakistan is defined as a "concentrated epidemic," which means that the prevalence of HIV amongst high-risk populations in Pakistan is greater than 5% (EMRO), 2016).

A study by United Nations Development Programme (UNDP) found that from 2005 to 2011, the prevalence of HIV amongst transgender sex workers increased from 0.8% to 5.2%, compared to 0.4%-1.6% and 0.2%-0.6% amongst male and female sex workers, respectively (Pakistan, 2014). Another study found that hijras are at 21.91 (95% CI 16.89-28.43) times greater risk of HIV than other adults of reproductive age in Pakistan (S. D. Baral et al., 2013). Many have dismissed the increasing prevalence of HIV within this population, claiming that it is not pertinent to the rest of Pakistani society (Abdullah et al., 2012). Recent studies have shown that Hijra Sex Workers (HSW) may play a role in HIV transmission to the broader population through their clients who represent varied community groups (e.g. men having sex with men, heterosexual men, and women) (Abdullah et al., 2012). For example, a study of hijras in Lahore showed 5.5% sold services to women within the past week (Rehan et al., 2009). These findings support the idea that the hijra population serve as a possible link for HIV transmission to the general population because of these intersecting social networks (Rehan et al., 2009).

The Pakistani government along with the World Bank has made efforts to curtail the spread of HIV in Pakistan through education/advocacy and behavioral change interventions within the general population and high-risk populations (Saleem, Adrien, & Razaque, 2008). However, an HIV surveillance study found that only 30.6% of HSW had heard of HIV prevention programs, and only 18.3% had ever participated in these programs (*HIV Second Generation Surveillance in Pakistan*, 2008). There needs to be more research done to understand the seeming contradictions between knowledge about these programs and participation in them (Saleem et al., 2008). Even though in many cases vulnerable populations are aware of their risky sexual behaviors, they do not change or stop them (Saleem et al., 2008). It is necessary to understand why this is the case, to address these underlying issues, and to eventually change these behaviors (Saleem et al., 2008). Thus, to better understand how to achieve behavioral change amongst the hijra population, it is important to understand the context in which these behaviors occur. Previous studies have suggested that social exclusion of this population may be associated with behaviors such as sex work and unprotected sex. According to the Social Exclusion Knowledge Network (SEKN) developed by Popay et al., social exclusion is on a spectrum ranging from complete inclusion to exclusion (S. I. Khan, Hussain, Parveen, et al., 2009). Factors that are important to assessing the level of social exclusion of a group range from cultural, to economic, political, and social (S. I. Khan, Hussain, Parveen, et al., 2009). Interventions targeting HIV/AIDS and STIs often do not consider these factors that lead at-risk populations, such as hijras, injection drug users, and sex workers to engage in high-risk behaviors, such as unprotected sex with multiple partners (Khosla, 2009). It is necessary to understand the social and cultural hurdles surrounding the hijra community in order to address

these issues and consequently decrease the risk of HIV/STIs (S. I. Khan, Hussain, Parveen, et al., 2009).

Theoretical Framework

Social Cognitive Theory (SCT) offers a useful theoretical framework to explore personal and environmental factors, as well as behaviors amongst the hijra population in Karachi. In SCT personal factors are defined as a person's beliefs, attitudes, and knowledge (Glanz, Rimer, & Viswanath, 2008). SCT defines environmental factors as an individual's physical surroundings, social norms, and social support(Glanz et al., 2008). Behaviors are actual actions, verbal or physical (Glanz et al., 2008). According to SCT, environmental factors, personal factors and behaviors are all interrelated, a concept known as reciprocal determinism(Glanz et al., 2008). This justifies the importance of looking at all three of these factors, as opposed to focusing on solely one aspect.

Purpose of Current Study

This study will explore the prevalence of risky sexual behaviors, such as sex work and condom use, within this population. Additionally, it will describe environmental and personal factors associated with social exclusion of this population. This research aims to serve two objectives:

1) To describe the hijra population in terms of access to resources and support, perceived attitudes within Pakistani society, past experiences, and involvement in risky sexual behaviors
2) To examine whether these environmental and personal factors may be associated with adoption of risky sexual behaviors

Chapter Two

Review of the Literature

The purpose of this literature review is to examine previous research regarding HIV prevalence, risky sexual behaviors, and social exclusion amongst transgender populations. Although the majority of the review focuses on studies in Pakistan, because the literature from Pakistan is scarce, it also examines several global studies conducted with this population, as well as studies focusing on Bangladesh and India, both of which are culturally and geographically similar to Pakistan. Through this examination, this review aims to establish a platform for the current study: *An Exploration of Social Exclusion and Risky Sexual Behaviors Amongst Transgender Women in Karachi, Pakistan.*

Transgender Women and HIV/AIDS Burden

According to a systematic review and meta-analysis focusing on HIV burden amongst transgender women, there is a high burden of HIV amongst transgender women around the world (S. D. Baral et al., 2013). Overall, looking at the 15 countries included in the analysis, transgender women were 48.8 (95% CI 31.2-76.3) times more likely to have HIV than other adults of reproductive age (S. D. Baral et al., 2013). Considering low-income countries in particular, HIV prevalence was approximately 17.7% (95% CI 15.6-19.8%), putting the odds of transgender women contracting HIV 50.0 (95% CI 26.5-94.3) times higher than other adults of reproductive age (S. D. Baral et al., 2013).

Looking specifically at transgender women in Pakistan, hijras constitute at least one quarter of the total sex workers in Pakistan (A. Khan, Rehan, Qayyum, & Khan, 2008). Engaging in sex work puts transgender women in Pakistan at a high-risk of contracting and transmitting

HIV(A. Khan et al., 2008). A study by the National AIDS Control Program in Pakistan showed an increase in HIV prevalence amongst hijras in Lahore and Karachi from 0.8% to 7.2% between the years of 2005 and 2011 (de Lind van Wijngaarden, Schunter, & Iqbal, 2013).

Similarly, the hijra population in India is also seen as a high-risk group for HIV infection and transmission (Sahastrabuddhe et al., 2012). Previous studies in India have shown a high HIV prevalence amongst hijras (17.5%-41%) (Chakrapani, 2010). One study in Pune, India found that the prevalence of HIV was over two times higher in hijra participants (45.2%) when compared to heterosexual men (20%) and men who have sex with men (18.9% , $p<.0001$) (Sahastrabuddhe et al., 2012). Sahastrabuddhe et al. argue that, similar to Pakistan, in India hijras play an important role in the transmission of HIV as there are hijras who (1) report having sex with women, and (2) report having bisexual male clients who have female partners (Sahastrabuddhe et al., 2012).

When looking at HIV interventions, and programs targeted at decreasing HIV incidence and prevalence amongst this population, it is necessary to note that these programs often negate the importance of targeting social exclusion, marginalization, and the socio-political and economic climate surrounding hijras (S. I. Khan, Hussain, Parveen, et al., 2009). It is important to first acknowledge the basic human rights issues hijras face in order for HIV interventions to be truly successful (S. I. Khan, Hussain, Parveen, et al., 2009).

Transgender Women and Risky Sexual Behaviors

Across the globe, a lack of economic opportunities available to transgender women often leads to heightened poverty and unemployment in this population and consequently frequent engagement in sex work. Transgender women frequently cite discrimination and harassment as reasons for choosing sex work as their source of income where they are still often at a higher risk

of abuse than male or female sex workers because of their hidden-identities (S. Baral et al., 2011).

In Pakistan, sex work, high levels of stigmatization, and negative attitudes have been associated with hijras engaging in risky sexual behaviors and being victims of violence and abuse. Results from a study of 200 hijras in Lahore found that 88% reported having anal sex during the past month, approximately 70% reported having unprotected sex with a new client in the past week, and around 72% reported unprotected sex with regular clients in the past week (Rehan et al., 2009). Five previous studies of hijras found the number of clients in the past month to range between 1-89 (Rehan et al., 2009).

Another study in Pakistan found that 74.3% and 91.7% of hijras sold anal sex to a man within the past week, and only 8.8% and 15.6% of hijras used a condom the last time they had anal sex with a "one-time" client in Karachi and Lahore, respectively (Bokhari et al., 2007). In a study of over 400 hijras in Karachi and Lahore, only 15-18% reported using a condom during their last sexual encounter, and 83% reported never using a condom (A. Khan et al., 2008). A total of 97% and 84% of hijras reported being involved in sex work; and 77% and 40% reported having at least one STI in Karachi and Lahore, respectively(A. Khan et al., 2008).

Similar to Pakistan, in Bangladesh sex work is often a profession hijras turn to, due to a lack of options. Sex work for transgender women in Bangladesh comes with increased risks as well. For example, hijras were often coerced into having free unprotected sex with their clients (S. I. Khan, Hussain, Parveen, et al., 2009).

The high prevalence of unprotected receptive anal sex has previously been identified as a risk factor for HIV and STIs acquisition among transgender women. A study in Bangladesh found that condom use amongst the hijra population is low in Bangladesh, even though there

have been condom interventions in the past (S. I. Khan, Hussain, Gourab, et al., 2009).. Factors influencing the low prevalence of condom use in this population are categorized as either structural (i.e. financial constraints, condom/lubricant availability, lack of knowledge, social exclusion) or individual factors - decreased pleasure, implication of distrust with partners, implications of being unclean, right of clients to refuse condom use, and the belief that they will be able to discern when someone has an infection (S. I. Khan, Hussain, Gourab, et al., 2009). Additionally, this study found a high rate of syphilis amongst hijras, which can also put them at a higher risk of HIV transmission (S. I. Khan, Hussain, Gourab, et al., 2009).

As described above, it is evident that sex work, as well as other high-risk sexual behaviors such as unprotected anal sex, are prevalent amongst transgender women. It is important now to discuss the social and cultural climate surrounding this population around the globe, and in Pakistan specifically.

Transgender Women and Social Exclusion

Social exclusion faced by transgender women around the world is often associated with a lack of access to resources and opportunities, as well as increased experiences of abuse (S. Baral et al., 2011). Basic needs, such as obtaining national identity cards and passports have been issues for transgender women in different countries (S. Baral et al., 2011). Recently there has been an increase in the work done with the hijra population in South Asia. A social exclusion framework has been applied to studies relating to the transgender population in Pakistan, India, and Bangladesh.

In Pakistan, high-risk behaviors, such as prostitution, and sexual and physical violence, have been associated with the social exclusion of hijras. A study regarding the social exclusion of hijras in Pakistan found a significant negative association between life satisfaction and social

exclusion (Ahmed et al., 2014). Additionally, violence, stigma, and discrimination are prevailing issues amongst transgender women (de Lind van Wijngaarden et al., 2013; Mohyuddin & Ali, 2013).

Similarly, in India UNDP states that transgender women face this separation through various avenues: exclusion from their families, physical/sexual/verbal abuse, harassment and abuse from doctors and other health professionals, absence of employment opportunities, an inability to access social welfare and insurance, and from taking part in politics (Chakrapani, 2010).

In examining social exclusion, it is important to look at both personal and environmental factors that contribute to this segregation. For purposes of this review, personal factors can be divided into two components: societal attitudes about transgender women, and negative experiences faced by this population. Environmental factors will comprise of access to resources and social support.

Societal Attitudes

In Pakistan, families are often unable to understand or accept their children who are transgender (Ahmed et al., 2014). This often leads to them playing an integral role in increasing the social exclusion faced by hijras, as opposed to protecting them from the rest of society (Ahmed et al., 2014). In a qualitative study of ten young hijras in Pakistan, three reported being told that they were: a “disgrace to the family”, brought embarrassment upon the entire household, or that it was a waste to spend money feeding them (de Lind van Wijngaarden et al., 2013).

A study by Khan et al. in Bangladesh explored various venues of social exclusion hijras faced. Researchers found that families of hijras often felt uncomfortable with the feminine

identities of their transgender family member (S. I. Khan, Hussain, Parveen, et al., 2009). This embarrassment/discomfort was exacerbated by judgment from the surrounding community (S. I. Khan, Hussain, Parveen, et al., 2009). Hijras reported feeling secluded within their communities: they recognized that they brought embarrassment to their homes, and often felt as though they had no social support (family or friends) (S. I. Khan, Hussain, Parveen, et al., 2009). As a result, a complex social structure has emerged over time that has allowed hijra to find a more accepting community.

There are two important "lines" that a transgender woman has: a "maternal" line and a "paternal" line. The "paternal" line, refers to the guru-chela relationship. The guru plays an authoritative role, where she offers protection and a feeling of belonging to her chela in return for loyalty and her earnings. Relations through this guru include brothers "guru bhais," who are the other chelas of her guru, and the nani guru (grandmother guru), or the guru of the guru. On the maternal side, the hijra has a "ma" (mother) who offers the hijra guidance and advice, there is no authoritative/financial relationship here. It is a familial relationship, where two hijras create a close bond and the older decides to make the younger one her daughter. The hijra is the "beti" (daughter) of her ma, and any other beti of her ma, is her sister (bhen). A diagram of depicting these relationships is included as Figure 3. Social Structure of Transgender Women's Community.

Past Experiences

Another hurdle transgender women often face is physical and sexual abuse - even at the hands of police officers (S. Baral et al., 2011). In one instance, after being gang raped by ten men, a transgender woman was forced to face more ridicule and torture (genital burning) by police officers after filing a complaint against the perpetrators (S. D. Baral et al., 2013).

Several studies conducted in Pakistan found evidence of high rates of physical and sexual violence amongst TGW (Abbas et al., 2014; Ahmed et al., 2014; Baqi et al., 1999; Hawkes et al., 2009; A. Khan et al., 2008). This included child sexual abuse, sexual and physical violence by police, and sexual abuse from clients. Prevalence of physical abuse ranged from 40-54%, with one study showing physical abuse by police for 32% of participants (Ahmed et al., 2014; Hawkes et al., 2009; A. Khan et al., 2008). In regards to sexual abuse, 62% of participants reported sexual violence in one study, prevalence of sexual abuse by clients and police ranged from 27-46% and 27-49%, respectively, and 39% had provided sex to police free of charge (Ahmed et al., 2014; Hawkes et al., 2009; A. Khan et al., 2008). Another study found that 57% of TGW transgender women had been sexually abused as a child (Baqi et al., 1999). Additionally, in a study of 120 hijras in Chiniot, Pakistan, 22% reported parents trying to murder them, and 42% reported being physically abused by their parents (Abbas et al., 2014).

In Bangladesh, one study found that some participants had been kept away from various family gatherings because of their gender identity (S. I. Khan, Hussain, Parveen, et al., 2009). For example, one participant spoke of how she was kept from participating in her father's burial because of her physical appearance (S. I. Khan, Hussain, Parveen, et al., 2009).

Access to Resources and Social Support

Transgender women face barriers to accessing various resources, including job opportunities, education, and medical care and social support from their families and friends. One study in the U.S. found that of 6,000 transgender individuals, 19% had previously been refused access to medical care because of their gender identification (S. Baral et al., 2011). Additionally, another study found that transgender women are often forced into men's prisons

and jails, where they are more likely than other inmates to face abuse, but less likely to be given medical attention (S. Baral et al., 2011).

In Pakistan hijras often have no access to health care or psychological support, and are not seen as equal to the rest of the population (Abbas et al., 2014). Furthermore, hijras are often forced to remain within their households during religious holidays, and are not permitted in many Mosques (Tabassum & Jamil, 2014).

Social exclusion within their families and communities has led a majority of hijras to move into their own communities: hijra deras (Ahmed et al., 2014; Mohyuddin & Ali, 2013). Hijras often, at least initially, reside with their *gurus* - leaders of the household who offer their *chelas* (child/son) a home, family, protection, and a sense of belonging in return for loyalty, and their earnings (de Lind van Wijngaarden et al., 2013; Rehan et al., 2009; Tabassum & Jamil, 2014). An HIV surveillance survey found that 70.9% of HSW reported living in deras (*HIV Second Generation Surveillance in Pakistan*, 2008).

In Bangladesh, hijras were ridiculed in school, where they were stopped from playing with the other children, and were frequently the center of jokes and pranks (S. I. Khan, Hussain, Parveen, et al., 2009). Additionally, they reported difficulty finding places to live, as landlords would refuse to rent them rooms (S. I. Khan, Hussain, Parveen, et al., 2009). For most hijras, it was difficult to find a secure employment opportunity due to both a lack of education and their gender identity (S. I. Khan, Hussain, Parveen, et al., 2009). Even for hijras who were able to secure job opportunities, the work place was often another source of physical, verbal, and sexual abuse by their male co-workers (S. I. Khan, Hussain, Parveen, et al., 2009). Seeking medical care was often a problem for the hijra population in Bangladesh. Doctors and hospital staff would be

abusive towards them, sometime refusing to treat them (S. I. Khan, Hussain, Parveen, et al., 2009).

Purpose of Current Study

According To Baral et al., because transgender women are often excluded from the rest of society, HIV prevention efforts seldom reach this population (S. Baral et al., 2011). This discrimination and exclusion are evident through a plethora of avenues including stigma, both perceived and experienced, abuse, marginalization, mental health issues, and risk of HIV and other sexually transmitted diseases(S. D. Baral et al., 2013). It is important to integrate transgender women into society in order to decrease the HIV burden on transgender women around the world (S. D. Baral et al., 2013).

This study aims to begin bridging this gap by exploring social exclusion and risky sexual behaviors amongst transgender women in Pakistan. There are several important gaps in the literature on studies exploring these factors. Currently, no measure has been developed to quantitatively assess these factors, or any association between social exclusion and risky sexual behaviors. Additionally, there are limited theoretically based studies, in general, addressing the hijra population. The proposed study will use the theoretical framework of SCT to address the current gaps in the literature and develop a questionnaire to first explore social exclusion and risky sexual behaviors amongst hijras in Pakistani society, and then assess whether there is an association between these two factors.

Chapter Three

Data Collection and Analysis Methods

Study Setting

The study took place in Karachi, Pakistan in June 2015. Karachi is the largest city in Pakistan, and plays an important role as a port city in the country. Data collection took place in deras across 13 neighborhoods throughout Karachi: Gulistan-e-Jauhar, Gabul Town 7, Godra Bengali Para, Khameesa Got Katchiabadi, Mujahid Colony North Nazimabad, UP More New Karachi Sector 11-J, Manzoor Colony, Bilal Chowrangi Awami Colony 2, Bilal Colony, Zamzama Upper Gizri, Isa Nagri, Gulshan Iqbal 13D2, and Moosa Colony.

Study Sample

The target population for this study was the hijra community in Karachi, Pakistan. All self-identified hijras over the age of 18, willing to participate in the study, and sexually active within the past three months were deemed eligible. In order to address the issue of the hijra community being a hidden population, a key-informant assisted in sampling procedures. This key informant was a male community health worker who has previously worked with high-risk populations such and transgender women, men who have sex with men, female sex workers and people who use injection drugs. Researchers utilized non-probability snowball sampling to identify participants for the study. Sampling and recruitment of participants took place in four steps: (1) the key-informant located and contacted an informant from the population, (2) together the key-informant and informant from the population identified gurus from 10 deras in the 13 neighborhoods listed above, (3) gurus from each of the 10 deras participated in the study, and (4) these gurus recruited their chelas to participate in the study. It was necessary to have the active

involvement of the key informant and gurus to aid with identifying participants, and to allow them to feel more comfortable with participation.

Study Design

A cross-sectional study was utilized to pilot test the survey instrument created to assess the social exclusion faced by hijras in Karachi, the prevalence of risky sexual behaviors in this population, and the association between this social exclusion and risky sexual behaviors. Due to the sensitive nature of this topic and the distrust of outsiders, a key-informant who has previously worked with this population was the main source of contact between researchers and participants. The survey instrument is quantitative in nature, however because the rate of illiteracy within this population is high, the key-informant verbally administered questionnaires to all participants.

Survey Development and Previous Scales

Previously, as part of an HIV/AIDS Surveillance Report in Pakistan, a Behavioral Surveillance Survey was created for HSW (*HIV Second Generation Surveillance in Pakistan*, 2008), this questionnaire served as a starting point for the creation of the survey instrument utilized in this study. This survey consisted of seven sections: (1) demographics, (2) information about sex work, (3) sexual behaviors with paying clients, (4) sexual behaviors with non-paying partners, (5) condom use, (6) knowledge about HIV/AIDS, and (7) STIs and concludes with a blood test for HIV. Items on this survey include "How long have you been in sex work," "At what age you had your first sexual intercourse," and "the last time you had anal sex with a paying client, did you use a condom," (*HIV Second Generation Surveillance in Pakistan*, 2008). Researchers were unable to use this instrument directly because this survey was created specifically for sex workers and does not look at items that pertain to the social exclusion of

hijras. The survey does not contain items about perceived attitudes or past experiences of discrimination and abuse, and contains limited items about access to resources and family support. However, this survey did serve as a platform for the development of the current study's questionnaire (Appendix A).

Current Survey and Measures

The first section of the questionnaire collected demographic information about the sample. The demographic indicators that were collected included: age (years), city of origin, marital status, level of education, current living arrangement, sex at birth, gender identity, who is aware of your gender identity, ever involvement in sex work, current involvement in sex work, sex work as a main source of income, and knowledge that sex work is illegal. Researchers included six items at the end of the questionnaire regarding HIV/AIDS and STIs. These items looked at participants' knowledge of HIV/AIDS/STIs, whether they had ever been tested, and if they had received any positive test results.

Quantitative measures were used to answer the proposed research question. Social exclusion was defined as personal and environmental factors that contribute to transgender individuals being estranged from the rest of the Pakistani community. Personal factors were measured through two variables: *Perceived Attitudes* and *Past Experiences.* Environmental factors were measured through the *Resources and Support* variable. Finally, behavioral factors, the outcome variable, were measured through *Risky Sexual Behaviors*.

Perceived Attitudes was defined as how transgender individuals believe others view them and their gender identification. There were a total of 4 items assessing *perceived attitudes*: (1) I feel that others are accepting of my gender identification, (2) I feel that others believe my gender identification goes against Islamic principles, (3) I feel that others are comfortable around me

regardless of my gender identification, and (4) I feel that others have excluded me because of my gender identification. Each of these four statements were posed as yes/no questions. If yes, participants were asked to specify how often then agreed with the statement, 25% of the time, 50% of the time, 75% of the time, or 100% of the time. These were marked on a scale of 1-5 on the questionnaire (1 = 0%/no 5=100% of the time). Items one and three were reverse-coded for the purpose of analysis. Chronbach's Alpha was calculated as 0.275 for this scale (SPSS Statistics 23).

Past Experiences were defined as negative behaviors and actions experienced by participants prior to the study, such as experiences of discrimination, harassment, and abuse. These items included: (1) I have been discriminated against (i.e. at stores, restaurants, public offices, public transportation) because of my gender identification, (2) I have been ridiculed for being too "feminine", (3) I have been ignored/avoided by others because of my gender identification, (4) I have experienced physical abuse (i.e. being hit, kicked, punched, slapped) because of my gender identification, (5) I have experience sexual harassment (i.e. sexual jokes, gestures, comments) because of my gender identification, (6) I have experienced sexual violence (i.e. rape, forced kissing, forced touching) because of my gender identification, and (7) I have been stopped from entering a religious building (i.e. Mosque, Church, Temple) because of my gender identification. These questions were also initially posed as yes/no questions. If participants answered yes, they were asked what percent of the time they have these experiences, with 1 = 0%, 2 = 25%, 3 = 50%, 4 = 75%, and 5 = 100% of the time. The calculated Chronbach's Alpha for this scale was 0.511 (SPSS Statistics 23).

Resources and Support was defined as access to resources, such as healthcare and education, and social support. There were a total of six *resources and support* items on the

survey instrument. These items consisted of the following stem "My gender identification did not prevent me from…" followed by (1)…receiving an education, (2)…finding working outside of sex work, (3)…accessing medical attention, (4)…finding doctors open to treating me, (5)…having the support of my friends, and (6)…having the support of my family. These questions were posed in the same format as the perceived attitudes items. All six of these items were reverse coded for analysis. Chronbach's Alpha was 0.401 for this scale (SPSS Statistics 23).

The outcome variable in this study was *Risky Sexual Behaviors. Risky Sexual Behaviors* were defined as behaviors that increase the participant's likelihood of contracting HIV/AIDS/STIs. Outside of the questions posed within the demographics section of the questionnaire (ever involved in sex work, current involvement in sex work, sex work as the main source of income), investigators included eight items about risky sexual behaviors in the questionnaire. The first item asked participants to report the number of sexual partners they had in the past 90 days, followed by a specification of the number partners that were male or female. Six of out the remaining seven items focused on condom use: (1) I used a condom with every partner in the past 90 days, (2) I used a condom each time I had sex in the past 90 days, (3) I used a condom each time I had anal sex in the past 90 days, (4) I used a condom each time I had oral sex in the past 90 days, (5) I have had unprotected sex with more than 1 partner in the past one month, and (6) I know how to properly use a condom. The last item included in this portion of the questionnaire was "I often have sex with multiple sex partners during the same week." These last three items had dichotomous yes/no responses. The other 5 items were asked in the same format as the past experiences items: first as yes/no, then as a percentage denoting the frequency. Both the dichotomous and continuous responses were used for purposes of analysis..

Data Collection

Data collection lasted a total of seven days: June 24th – June 30th 2015, with one break on June 25th to allow for further planning. All data were collected from participants during one session, with each session lasting approximately 20-35 minutes. No follow-up visits were required. Based on previous research standards, participants were offered Rs 400 (equivalent to $4 US dollars) as compensation for participation in the survey.

The survey instrument and consent form were written by researchers in English, and were translated to Urdu by researchers at Aga Khan University in Karachi, Pakistan. After constructing the questionnaire, the primary investigator had the instrument reviewed by two professors at Rollins School of Public Health, a doctor at Aga Khan University in Karachi, and the key informant in Karachi who would be conducting the interview. This allowed the instrument to be reviewed for clarity, biases in questions, cultural sensitivity, and understandability. As discussed later, the questionnaire was also piloted with five participants at the start of data collection.

Each interview consisted of the following steps: (1) the interviewer read the informed consent form to the participant, (2) the interviewer received verbal consent from the participant, (3) the interviewer signed the consent form indicating that it had been relayed to the participant, (4) participants were asked if they were comfortable with the researcher being present during the interview, and (5) the interviewer went through all questions on the survey with the participant.

Researchers used the first five interviews to pilot the survey, which showed that participants found Likert-scales, the original format of the questions, difficult to understand. There were two Likert-scales utilized in the survey instrument: a five point strongly agree to strongly disagree scale, and a five point always to never sale. In order to ensure accurate results,

researchers restructured the survey questions into two tiered questions. The interviewer first posed each question as a yes/no statement; followed by a probe asking what percent of the time the statement was true (0%, 25%, 50%, 75%, 100%). The results from these five interviews were not used in the analysis.

Between days two and day five, researchers visited a total of ten deras and one family home and identified 91 transgender individuals. Of these 91, they received nine refusals, and one participant was removed from the analysis due to a high number of non-responses. The final sample size used in the analysis was 82 (Figure 4).

Analysis

First, data were entered into spreadsheets on Microsoft Excel, and re-checked for data entry errors. Microsoft Excel was used for basic data management and data cleaning procedures, including dealing with missing responses. During this step, one participant was removed from the sample due to a high number of non-responses.

Second, data were transferred to SAS (Version 9.3) software to complete descriptive analyses. Frequencies, percentages, and distributions were calculated for the following demographic variables: age (in years), marital status, education, living arrangement, birth sex, gender identity, open gender identity, and number of sexual partners. Frequencies, percentages, and distributions were also calculated for items pertaining to knowledge about HIV/AIDS, being tested for HIV/AIDS, HIV/AIDS results, STI knowledge, STI tests, and STI results. Additionally, SAS was used to calculate the distribution of dichotomous and Likert-scale responses for items pertaining to *perceived attitudes, past experiences, access to resources,* and *risky sexual behaviors*.

Third, cumulative scores were calculated for each of the predictor variables: *perceived attitudes, past experiences and access to resources.* Scores from *acceptance of gender identity, gender identity defies Islamic principles, discomfort due to gender identity,* and *exclusion due to gender identity* were summed to create a cumulative *perceived attitudes* value. Scores from *discrimination because of gender identity, labeled feminine because of gender identity, ignored because of gender identity, physical abuse because of gender identity, sexual harassment because of gender identity, sexual violence because of gender identity,* and *restriction from entering religious building because of gender identity* were summed to calculate a final score for *past experiences*. *Access to education, access to job opportunities, access to medical care, access to doctors willing to treat, access to family support,* and *access to support from friends* were summed to create a composite score for *access to resources and support.* After creating composite scores for these three predictor variables, median splits were calculated for each of them.

Fourth, Spearman's Rho correlations for all demographic variables and the eight outcome variables were calculated using SAS (Version 9.3) to explore potential covariates. A correlation matrix was created with these values, and any values $p < 0.20$ were considered significant, and retained as covariates. Spearman's Rho values and p-values were reported.

Fifth, using SAS (Version 9.3) Spearman's correlations were calculated for all predictor variables and outcome variables to assess bivariate associations. A correlation matrix was created with these values. Spearman's Rho values and p-values were reported.

Sixth, multivariate logistic regressions were conducted to assess the associations between *perceived attitudes, past experiences, access to resources* and each of the eight dichotomous outcome variables (*condom use, condom use with each partner, condom use for anal sex,*

condom use for oral sex, unprotected sex with multiple partners, sex with multiple partners per week, current sex work, and *sex work as the main source of income).* Covariates with significant Spearman's Rho correlations were included in models. Covariates consisted of age, education (any vs. none), ever married, current living situation (dera vs. family home), and open about gender identification (with everyone vs. just friends). Significant associations were set at $p<0.05$. Multivariate logistic regressions were conducted with categorical outcome variables, and with both categorical and continuous values for the three predictor variables. Regression coefficients, chi-square test statistics, p-values, and odds ratios were reported for all logistic regression models.

Seventh, multivariate linear regressions were conducted to access the associations between the continuous variables for *perceived attitudes, past experiences, resources and support,* and the continuous outcome variables (*condom use for anal sex, condom use for oral sex, condom use,* and *condom use with each partner).* Significant associations were set at $p<0.05$. Covariates that were significant based on Spearman's Rho Correlations were included in these models. These covariates included: age, education (any vs. none), ever married, current living situation (dera vs. family home), and open about gender identification (with everyone vs. just friends). Regression coefficients, F/t-values, and p-values were reported for all logistic regression models.

Eighth, using dichotomous results from the outcome variables, Chi-Square values were calculated for each of the outcome variables (*risky sexual behaviors)* and each item comprising of the scales used as predictor variables in multivariate models: *perceived attitudes* (4 items), *past experiences* (items), and *access to resources* (items). These values were calculated to explore whether any of the individual items were associated with the predictor variables. For

this, researchers considered any associations with $p < 0.05$ as significant. Chi-square values and p-values were reported for all chi-square tests.

Chapter Four

Results

Sample Demographics

The median age of participants was 37.5 years, with a range between 18 and 45 years old. The mean age of participants was 29.24 years. The majority of participants were unmarried (87.5%), with ten reporting being currently married (12.20%), and one each separated and widowed (1.22%).

The highest number of participants reported that they were uneducated (37.5%). Out of those who received some formal education, the highest number of participants reported primary (23.17%) or middle (23.17%), followed by metric (14.63%) and intermediate (3.66%), with no participants reporting graduate level education. Most participants lived in deras (87.80%), while the remaining 12.2% stated that they lived at home with their families.

All participants in the study reported that their biological sex at birth was male, and self-identified as transgender. The majority of participants (72) stated that they are completely open about their gender identity, while the remaining ten said that they were open with their friends, but not their families, about being transgender.

All participants reported ever being involved in sex work, and 74 (90.24%) reported that they are currently involved in sex work. For 37 participants (45.12%), sex work constituted their main source of income. A total of 81 out of 82 participants in the study stated that they are aware sex work is illegal. The median number of sex partners within the past 90 days was 35, with a range from 1-895 different sexual partners in the three months prior to the date of the survey. All demographic characteristics are included as Table 1.

Perceived Attitudes

All participants felt that others accepted them regardless of their gender identity. However, only 31.71% felt that way 100% of the time. From the remaining participants, 13.41% felt that they were accepted 75% of the time, 40.24% felt accepted 50% of the time, and 14.63% felt accepted only 25% of the time.

Only one participant disagreed with the statement "I feel that others believe my gender identification goes against Islamic principles." Half of the participants agreed with this 25% of the time, 35.27% of participants found this to be true 50% of the time, 7.32% agreed 75% of the time, and 6.10% said this statement was true 100% of the time.

Approximately 24% of respondents felt that others were always comfortable around them regardless of their gender identification, 17.07% stated this was true 75% of the time, 34.15% agreed half of the time, and the remaining participants agreed 25% of the time.

The majority of participants (91.46%) felt that others had at some point excluded them due to their gender identification. Most participants felt that way 50% (41.46%) or 25% (32.92%) of the time, while 8.54% felt that way 75% and 100% of the time. Results from *perceived attitudes* items are included in Table 2.

After computing distributions for each separate *perceived attitudes* item, all four items were summed to calculate a cumulative *perceived attitudes* score. The range of *perceived attitudes* scores was 4-16, with a median score of ten. The highest possible score would have been 20 (score of 5 on all 4 items). These cumulative *perceived attitudes* scores were used for multivariate statistical analyses.

Past Experiences

The majority of participants reported that they faced discrimination because of their gender identification 25% or 50% of the time (25.61%, 45.12%). Only 7 participants said that they had no previous experience with discrimination due to their gender identity (8.54%).

Most participants had been ridiculed for being too feminine (96.4%), with 23.17%, 30.49%, 29.27%, and 13.41% reporting being ridiculed 25%, 50%, 75%, and 100% of the time, respectively.

Of the 82 participants, 37 (45.68%) reported that they were ignored 50% of the time, whereas only six participants stated that they had never been ignored because of their gender identification (7.41%). The majority of participants reported that they have previously experienced physical abuse (79.27%), sexual harassment (96.34%), and/or sexual violence (75.61%). All findings from *past experiences* are included in Table 3.

The seven *past experiences* items were summed to calculate a cumulative *past experiences* score. The range of *past experiences* scores was 9-27, with a median score of 17.5. The highest possible score would have been 35 (score of 5 on all 7 items). These cumulative *past experiences* scores were used for multivariate analyses.

Access to Resources and Support

Finding a job outside of sex work was an issue for the majority of participants (64.63%), with 35.37% stating that they felt being transgender prevented them from finding a job 100% of the time. Ability to receive/seek an education was also decreased because of their gender identity according to 78.05% of participants.

Most participants did not have difficulty finding medical attention, or doctors willing to treat them (92.68% and 91.46%, respectively). Additionally, 84.15% of participants felt that they

received social support from their friends, regardless of the fact that they are transgender. Whereas a smaller majority (59.76%) felt that they had the complete support of their families. Results from this section of the questionnaire are included as Table 4.

*A*ll six *access to resources and support* items were summed to calculate a cumulative score. The range of scores was 5-22, with a median score of 12. The highest possible score would have been 30 (score of 5 on all 6 items). These cumulative scores were used in multivariate analyses.

Risky Sexual Behaviors

From the entire sample, 78% of participants reported sex with multiple partners in one week, and 56.1% of participants stated that they did not use a condom with any partner over the past 90 days. Comparatively, only 15.85% stated that they used a condom with every partner over this time period.

49 participants (56.10%) said that they never used condoms during sex over the past three months. According to 13 participants, they used a condom each time they had sex over the past 90 days, with 23 participants reporting condom use 25-75% of the time.

Most participants stated that they did not use condoms during anal sex over the past 90 days (57.32), followed by 21.95% of participants reporting use of condoms during anal sex 25% of the time, 3.66% half the time, and only 15.85% said that they used condoms 100% of the time for anal sex.

The large majority of participants reported that they did not use condoms during oral sex over the past 90 days (84.15%). Only 5 participants (6.10%) reported consistent use of condoms during oral sex over the past three months.

Approximately 37.8% of participants stated that they did not know how to properly use a condom. Findings from this portion of the questionnaire are included as Table 6.

HIV/AIDS

From the 82 participants, 72 (87.80%) said they had heard of HIV/AIDS, 44 participants (53.66%) said they had previously been tested for HIV, and of those, 1 had received a positive HIV test. Three of the participants who had previously been tested stated that they had not received any test results. 41 participants, half of the sample, had either never heard of or never been tested for HIV (Table 7).

STIs

Looking at STI's, 52 participants (62.60%) were aware of at least one sexually transmitted infection (STI), 21 (25.61%) had previously been tested for an STI, and 8 (9.76%) received a positive result. The majority of the sample, however, had either never heard of or never been tested for any STI (70.73%) (Table 8).

Correlations (Demographics and Outcome Variables)

Bivariate analyses between demographic and outcome variables showed several significant Spearman's Rho correlations (Table 9). There were no significant correlations between *current sex work* and any of the demographic variables.

Sex work as a main source of income showed significant ($p<0.2$) correlations with *age* ($p=0.01$), *ever married* ($p=0.03$), and *being open about gender identity* ($p=0.02$). Researchers found a significant correlations between *condom use with every partner (90 days), condom use each time (90 days), condom use each time anal (90 days)* and *education* (any vs. none) ($p=0.08$, 0.09, and 0.04). *Condom use each time oral (90 days)* has a significant correlation with *ever married* ($p=0.11$) *Unprotected sex with more than one partner (30 days)* was significantly

correlated with *age* (p=0.07) and *educated* (p=0.19). There was a significant correlation (p=0.02) between *age* and *multiple sex partners in the same week.*

All demographic variables that were significantly correlated at p<0.20 were included as covariates in the respective multivariate models discussed below.

Correlations (Predictor Variables, Outcome Variables, and Demographics)

Researchers ran Spearman's rho correlations for *perceived attitudes, past experiences,* and *access to resources and support* with all eight outcome variables, and the five demographic variables. Correlation matrices are included as Tables 10-12. *Sex work as main source of income* showed correlations with *past experiences* (p=0.07) and *access to resources and support* (p=0.04). *Condom use each time (90 days)* was correlated with *perceived attitudes* (p=0.11). *Past Experiences* was also correlated with *age* (p=0.11) and *ever married* (p=0.17). *Perceived attitudes* showed a correlation with *educated* (p=0.11).

Multivariate Logistic Regression

Researchers ran eight multivariate logistic regression models using all eight outcome variables (*current sex work, sex work as main source of income, condom use with each partner (90 days), condom use each time (90 days), condom use each time anal (90 days), condom use each time oral (90 days), unprotected sex with more than one partner (30 days),* and *multiple sex partners in the same week).*

The overall model including *sex work as the main source of income* as an outcome variable, with *perceived attitudes, past experiences, access to resources and support, age, ever married,* and *open about gender identification* was significant (p=0.0034). However, none of the individual predictor variables were significantly associated with the outcome.

Results from the other models did not show any significant associations ($p<0.05$). All models along with estimates, test statistics, and p-values are included as Tables 13-20.

Multivariate Linear Regression

Researchers ran four multivariate linear regression (MLR) models with *condom use with each partner (90 days), condom use each time (90 days), condom use each time anal (90 days),* and *condom use each time oral (90 days)* as the outcome variables. All three predictor variables *perceived attitudes, past experiences,* and *access to resources and support* were included in all four models, along with any covariates.

The model with *Condom use each time (90 days), perceived attitudes, past experiences, resources and support,* and *educated* was significant (β 1.54; p=0.03). The model showed a significant association between *past experiences* and *condom use each time (90 days)* while controlling for the other variables in the model (p=0.03). *Perceived attitudes, access to resources and support,* and *educated* did not show significant associations.

The other three multi-linear regression models were not significant. Tables 21-24 highlight results from all four MLR models.

Chi-Squared Tests

Chi-Squared tests were conducted for each individual *perceived attitudes, past experiences,* and *access to resources/support* item (total = 17 items) with each of the eight outcome variables. Chi-squared values and p-values are included in Tables 25-27.

"I feel that others are accepting of my gender identification" (reverse-coded) was significantly associated with using a condom for oral sex in the past 90 days ($x^2 = 6.31$, p =0.0012). "I feel that others are comfortable around me regardless of my gender identification"

(reverse-coded) was significantly associated with using a condom each time during sex over the past 90 days ($x^2 = 3.89$, $p = 0.048$).

There was a significant association between being ridiculed for being too feminine and sex work as a main source of income ($x^2 = 5.64$, $p = 0.019$). "I have experienced physical abuse because of my gender identification" was significantly associated with three of the eight outcome variables: using a condom with every partner in the last 90 days ($x^2 = 4.83$, $p = 0.028$), using a condom each time during anal sex over the past 90 days ($x^2 = 4.11$, $p = 0.042$), and using a condom each time during oral sex over the past 90 days ($x^2 = 6.13$, $p = 0.013$). Prior experiences of sexual harassment because of gender identification showed a significant association with having sex with multiple partners within the same week ($x^2 = 9.92$, $p = 0.002$).

Difficulty finding doctors open to treating transgender women was significantly associated with using a condom with every partner in the past 90 days ($x^2 = 4.17$, $p = 0.041$), and with using a condom each time during anal sex over the past 90 days ($x^2 = 3.96$, $p = 0.046$). Other chi-squared tests did not show significant associations.

Chapter Five

Discussion

Descriptive Statistics

The primary objective of this study was to explore social exclusion and risky sexual behaviors amongst transgender women in Karachi. With regards to social exclusion, the study focused on personal (*perceived attitudes* and *past behaviors*) and environmental *(access to resources and support*) factors. To gain a better understanding of the prevalence of risky sexual behaviors in this population, the study gathered information about involvement in sex work, number of sexual partners, and condom use.

The range for cumulative *perceived attitudes* scores was quite large (4-16), with a median score of ten. Higher scores reflect that participants felt stronger negative attitudes from the surrounding community. Findings from the item "I feel that others are accepting of my gender identity" showed that all participants agreed with this statement. However, there was some variability in the extent to which they felt accepted. This was an interesting finding considering that hijras are a highly marginalized population. It is also somewhat startling when comparing the results from this item to the results when participants were asked if they felt excluded by others because they are transgender. A large majority (91.46%) of the sample felt that they had been excluded at some point, and over 50% of participants felt that they were excluded at least half of the time. As opposed to the acceptance item, results from the exclusion item included with perceived attitudes were more congruent with findings in previous studies which showed that transgender women are often excluded from society (S. Baral et al., 2011). One possible explanation for this discrepancy could have been misinterpretation of the statement. If

participants took “accept” to mean that others believed that they were transgender instead of as being accepted as a part of society, this may have influenced their responses.

All, except one, transgender women from the sample felt that others view being transgender as going outside of Islamic principles. This is something that can truly influence the lives of transgender women in Pakistan because it is an Islamic Republic. For example, Pakistani community may use this as a justification to exclude transgender women from society, arguing that being transgender is not acceptable by Islam. Further, this can potentially lead hijras to feel increasingly disconnected from the rest of the population, as well as their own faith, if they are unable to participate in religious activities, or are consistently told that they are going against Islam.

The *past experiences* findings showed that most of the sample had previously faced some sort of discrimination, harassment, or abuse simply because they were transgender. Similar to previous Pakistani and global literature, participants in this sample faced a high prevalence of physical and sexual abuse (S. Baral et al., 2011). Additionally, there were high levels of discrimination and harassment reported by hijras in this study (90% and 96.34%, respectively). This adds to the current literature that transgender women in Pakistan do fall victim to these negative experiences, and posits that this is an important factor to investigate more carefully and take into consideration when developing programs or studies within this population.

Most of the sample did not have issues seeking medical treatment, or finding doctors that were willing to treat them (approximately 92% for both). This is not consistent with the literature, where other studies found that transgender women faced a plethora of hurdles while trying to access healthcare. A study in Bangladesh found that transgender women had difficulty accessing medical care because they would be abused by both doctors and hospital staff, and

were frequently denied treatment (S. I. Khan, Hussain, Parveen, et al., 2009). One potential explanation for this could be that participants did not fully comprehend these questions: participants may have interpreted this question as their actual capability of going to a hospital or doctor's office, as opposed to their experiences at these facilities compared to the general population. For example, if participants had been asked if they had ever been ridiculed when seeking medical attention, if they had been discriminated against at medical facilities, if they had previously felt uncomfortable looking for health care services, or if they had ever faced stigmatization by doctors or other medical staff, there may have been more variability in responses. The two items pertaining to health care (access to medical treatment and doctors willing to treat), were general statements, therefore it may be necessary to create more specific items regarding visits to hospitals and doctors' offices to gain better insight into these experiences.

Receiving social support from family and friends did not seem to be a prominent issue within the sample. Most participants in the sample reported at least some support from their families (90%). This was an unexpected finding because previous research has shown that transgender women often felt isolated from their families or felt that they brought shame to their families (S. I. Khan, Hussain, Parveen, et al., 2009). As seen with a few of the other findings from this study, these findings may be attributed to the fact that this item was a very general statement. Additionally, it is important to consider how these participants define the term "support." For some participants support may encompass living in their family homes, for others it may mean that their families still speak with them, yet for others it may mean that they did not face abuse from their families. It is important to more clearly define "support," perhaps through offering participants examples of support. Furthermore, it is possible that interactions vary with

different members of the family. Previous qualitative research may have found trends around a theme of lack of family support if participants stated negative experiences with one family member. Closer exploration into which family members are more likely to be supportive, as well as which members are more likely to exclude their hijra family members may be necessary. The majority of participants from the study came from low socioeconomic classes, and some felt responsible to send part of their earnings home to their families. This financial responsibility may have also contributed to participants feeling closer to, or supported by, their families. It may be necessary to see the difference in family support for participants who do and do not provide financial assistance to their families.

Similarly, a large majority of participants stated that they received support from their friends. However, discussing social support from friends posed a hurdle, because for most participants "friends" were their current friends, who were predominantly also self-identified hijras. They did not typically consider friends outside of this social circle, which may have confounded results from this item.

The two resources that posed the most issues for hijras were access to education and access to job opportunities outside of sex work. Approximately 78% of participants felt that their gender identity prevented them from pursuing an education. This was true for participants who had never received formal education, and participants who attended school for a while and then stopped. Around 65% of participants believed their gender identity served as an obstacle to finding a job. This has been a common explanation for why there is a high prevalence of sex work amongst transgender women. One participant expressed "Our biggest issue is that we don't have work. We don't have a way to make money. The first thing we need is education." This statement may represent the sentiment of many transgender women in Pakistan, and globally, in

regards to education and employment opportunities and should be further examined in future qualitative studies.

Compared to previous studies, the prevalence of risky sexual behaviors was high amongst the sample. The consistent use of condoms amongst different partners, each time, during anal sex, and during oral sex was low across the sample. A total of 56% of participants stated that they never used a condom, 57% said they had not used a condom for anal sex, and 84% did not use a condom for oral sex all in the past 90 days. Previous studies with similar findings have reported decreased pleasure and distrust of partners as two barriers to condom use (S. I. Khan, Hussain, Gourab, et al., 2009). Another barrier to condom use was that 37.8% stated that they did not know how to properly use a condom, and it is impossible to know if those who said they were able to use a condom actually did know.

HIV/AIDS and STIs

Looking at results from both the HIV/AIDS and STI portion of the questionnaire, there is a large gap between the percentages of respondents who have heard of HIV/AIDS/STIs and those who have been tested. For HIV/AIDS, approximately 88% had heard the name, but only 54% had been tested. It is important to understand why the remaining 34% of participants did not get tested, as well as how to educate those who are unaware of HIV/AIDS about it. There was one respondent (1.22%) from the sample who received a positive result.

A total of 62.6% of participants knew about at least one STI, but only 26% had ever been tested for any STIs. This shows a much larger gap in knowledge about STIs in the sample, as well as difference of 36.2% respondents who were aware of STIs but had not ever been tested.

Predictive Models

The second objective of this study was to explore potential predictive models, and examine whether personal and environmental factors that contribute to the social exclusion of hijras are associated with a higher prevalence of risky sexual behaviors in the population. One significant finding suggests that past experiences significantly predicted condom use each time you had sex over the past 90 days. Specifically, as participants reported more negative past experiences, they were more likely to report less frequent condom use. One potential explanation for this could be that participants who have faced higher levels of discrimination, harassment, or abuse in the past may have lower self-efficacy regarding condom use as well as tools to discuss condom use with partners. This would fit with previous literature which cited distrust of partners and clients having the right to refuse condom use as reasons for the low prevalence of condom use amongst hijras in Bangladesh (S. I. Khan, Hussain, Gourab, et al., 2009).

Exploratory Findings

To look more closely at associations between the various items on the questionnaire pertaining to *perceived attitudes, past experiences,* and *access to resources and support* and *risky sexual behaviors*, researchers ran chi-squared tests for each of these combinations. The chi-squared tests yielded a total of nine significant findings. The majority of these were encompassed under the umbrella of *past experiences*. Being ridiculed for being feminine, physical abuse, and sexual harassment all showed significant associations with various risky sexual behaviors (Table 26). Physical abuse in particular showed a significant association with condom use with every partner, condom use during oral sex, and condom use during anal sex. This provides further evidence that previous experiences of discrimination, harassment, and abuse are important to consider when working with risky sexual behaviors in this population. Taken together, results

from exploratory findings and from the multivariate linear regression show that there may be a link between negative experiences in the past and condom use.

Social Cognitive Theory

As mentioned earlier, one of the attributes of SCT is that it explores the relationship between personal factors, environmental factors, and behaviors on an individual level. This theory provided a framework for exploring avenues of social exclusion in transgender women in Pakistan, as well as risky sexual behaviors in this population. Environmental factors showed the lowest prevalence from these elements (median cumulative score 12). Past experiences, one of the two measures of personal factors had a median score of 17.5, exactly half of the possible total cumulative score. Regarding frequency, this implies that half of the participants face negative experiences at least half of the time, and half face them less than half of the time. Similarly, perceived attitudes had a median score of ten, half of the total possible cumulative score. The prevalence of risky sexual behaviors, the behavior of interest in this study, was high across the entire sample. Findings from this study show that all three of these factors are present in this sample, which shows that it is important to explore all three of these simultaneously. However, as is seen from the predictive models, it does not provide strong evidence for an association between environmental and personal factors and behaviors.

Strengths and Limitations

This study is one of a limited number of studies conducted with the hijra population in Pakistan. It explores various factors that may influence behaviors within this population, and provides necessary information about transgender women in Pakistan. It delves into the various experiences and beliefs of hijras, as well as the resources they have difficulty accessing, and their sexual behaviors. Unlike much of the previous research done with the hijra population in

Pakistan, this study uses quantitative measures to explore incidences of social exclusion and risky sexual behaviors.

In the past, there have been limited studies that use behavioral theory as a foundation for research conducted with this population. This study utilized Social Cognitive Theory to guide survey development, an important addition to the current literature.

The researchers utilized the first five surveys as "pilot" surveys to work out the issues they saw with the instrument, and to allow the interviewer to become familiar with the questionnaire. Additionally, it is important to note that researchers utilized an interviewer who had previously worked with this community, which allowed participants to feel more comfortable.

There are several limitations to this research that must be acknowledged. First, this study utilized snowball sampling, which subjects the data to bias. An issue with snowball sampling is that often participants in a study come from the same social circles and may have similar behaviors, experiences, and beliefs, which can decrease the generalizability of the results to the rest of the population. However, because hijras in Karachi are a highly marginalized population, they are often a hidden and difficult to reach population. For this reason, the most efficient way to reach this population was through existing networks (such as through gurus).

Second, the need to change the method of asking questions on the questionnaire may have introduced measurement error into the data. As was mentioned earlier, it was difficult for participants to understand the different choices on the Likert-scale responses, and therefore researchers had to find a way to work around this on the spot.

Additionally, there was low internal reliability (Cronbach's Alpha), for all three of the scales: *perceived attitudes, past experiences,* and *access to resources and support.* For this

reason, researchers decided to analyze data using cumulative scores and median splits for these three measures, as opposed to using them as scales. Reliability measures an instrument's ability to provide consistent, reproducible results if it is administered multiple times. This implies that it may be necessary to take a closer look at inter-item correlation and the number of items for each of the three scales when constructing a social exclusion instrument in the future.

Pakistan is an Islamic Republic, therefore the topic of sex is typically taboo within this society. This was further confounded by the fact that study was conducted during the month of Ramadan, a holy month for Muslims. Participants may have felt uncomfortable discussing sexual behaviors during the month of Ramadan. Additionally, because it was Ramadan, a large number of hijras were travelling home to their families, and data needed to be collected quickly. For this reason, all data collection was limited to six days. This posed another issue because of interviewer fatigue.

Although the primary investigator for this study did not conduct the interviews, she was present during data collection. This may have served as an additional limitation because several participants expressed that they often feel embarrassed discussing sexual behaviors in front of females.

Due to the sensitive nature of the topic, having an interviewer ask the participants questions, as opposed to having self-administered questionnaires may have introduced bias to the responses. Respondents may have felt pressured to offer more socially acceptable responses, or responses catering to what they believed the interviewer was looking for. As mentioned earlier, self-administered questionnaires were not utilized because of the high rates of illiteracy in this population.

Sampling was done through gurus, who play an authoritative role over their chelas. This may have increased misinformation bias as gurus could have influenced responses by telling their chelas what they could or could not discuss, or how to answer certain questions.

One of the neighborhoods visited by investigators was a heroin district. There were several participants recruited from this neighborhood, which included individuals who were high or who had not had their dose of heroin for the day. This could have influenced their comprehension of the questions, as well as their responses to the interviewer.

A few additional limitations included: a small sample size – the data would not show as much variability as would be seen with a larger sample size, the survey instrument was not psycho-metrically tested, and during analysis researchers ran a large number of chi-squared tests. When running such a large number of chi-squared tests, it is likely that some associations will result in spurious findings.

Implications and Recommendations for Further Study

This study sets a foundation for future studies to build on, and has implications for behavioral sciences, health education, and public health as a whole. The main conclusion to take away from this exploratory study is the importance of behavioral change and health education in this population. Looking at sexual health, there are negative implications for transgender women in Pakistan without some sort of intervention. The prevalence of sex work, the high number of partners, and the low rates of condom usage put transgender women at a high risk of HIV/AIDs and STIs. Furthermore, the high prevalence of physical and sexual abuse in this population must be acknowledged and decreased as well.

In the future, it is necessary to conduct larger scale national behavioral studies to better assess these personal and environmental factors, and to see if they are associated with risky

sexual behaviors in this population. Future studies should consider how to implement random sampling, as opposed to respondent driven sampling. In addition, future researchers should consider creating psychometrically tested scales to conduct the survey. One step in creating these reliable and valid scales may be to conduct a mixed-methods study that looks at quantitative assessments of social exclusion (personal and environmental factors) and risky sexual behaviors, and also consists of a qualitative component. This qualitative component will serve as a more in-depth exploration of these factors. For example, if participants report that they have experienced discrimination, investigators may look into the avenues of discrimination, who this discrimination comes from, and how they are discriminated against. These two components taken together will serve as a strong foundation to base the development of a social exclusion scale on because researchers will be able to create more specific items, as opposed to items that are generalized and potentially difficult to comprehend/interpret.

It is necessary to focus on integrating behavioral change theory into future research and interventions targeting social exclusion and risky sexual behaviors in hijras. Social Cognitive Theory provided a strong framework to base the current study on, and SCT as well as other behavioral change theories and models can be used in the future to develop interventions.

As is evidenced through results from this study, and previous studies, it is necessary to develop programs targeted at HIV/AIDS/STIs amongst transgender women in Pakistan. This, coupled with the lack of education regarding these issues, creates the potential for spread of both HIV/AIDS and STIs in this population. It is necessary to increase education and awareness about sexually transmitted diseases, and to increase access to testing. It is difficult to know the burden of disease in this population if they are not being tested.

Further the low rates of condom usage study shows the importance of educating this population on safe sex practices, and the consequences of unsafe sex. The lack of condom use, coupled with a high number of partners over the past 90 days, with 78% of participants claiming that they have multiple partners within one week has negative implications for the sexual health of participants. A large percentage reported that they did not know how to use a condom, pointing to the fact that it is necessary to have programs that will teach correct condom usage as well. In the future, studies should investigate further the exact reasons for low rates of condom use in the population. Studies in Bangladesh have shown that it can be related to personal and structural factors (S. I. Khan, Hussain, Gourab, et al., 2009), this could provide vital information to for structuring condom programs. Programs created for condom use should additionally focus on the self-efficacy of condom use amongst transgender women. As was seen with the study in Bangladesh, transgender women often refrained from condom use because of their partners or clients. It is important that they not only have the knowledge required to use a condom, and access to condoms, but it is equally important to have the skills necessary to negotiate condom use with partners.

Past experiences showed the strongest association with risky sexual behaviors. This has strong implications for future research, as it is a relationship that should be explored more in-depth. It is important to look at different experiences, such as harassment, discrimination and abuse in more detail. For example, if a transgender woman reports that she is sexually abused on a frequent basis, it may be important to explore exactly how often it is happening, what type of abuse it is, when the abuse started, and other factors relating to the abuse. This will give researchers a better understanding of the circumstances around these experiences, and can help develop targeted programs to prevent these experiences.

Finally, even with various programs and interventions targeted at decreasing the social exclusion of this population, as well as programs focused on improving their sexual health and access to sexual health services, it will be impossible to fully integrate them into Pakistani society without research into and interventions within the general population. As has been seen in this study, as well as in previous research globally, transgender women feel that they are not accepted by society, often face obstacles when trying to access resources and have a high prevalence of negative experiences with members of the general population. It is necessary to understand the roots of these attitudes and behaviors towards transgender women. After delineating these attitudes, beliefs, and societal norms, it is necessary to develop interventions targeted at changing these normative beliefs and behaviors. Until successful interventions are developed to decrease social exclusion of transgender women both within this population, and in the general population of Pakistan, it will be difficult to fully integrate hijras into society.

Conclusions

The primary purpose of this study was to explore experienced and perceived social exclusion and risky sexual behaviors amongst hijras in Karachi, Pakistan. The study focused on perceived attitudes, past experiences, and access to resources and support as measures of social exclusion. For risky sexual behaviors, the study explored participation in sex work and condom use as the main indicators. The secondary purpose of this study was to explore associations between social exclusion and risky sexual behaviors. Despite its limitations, this study adds to the scarce exploratory literature on this population. Although the study did not provide strong evidence for associations between social exclusion and risky sexual behaviors, this association should be further explored through a validated and reliable instrument, and with a larger sample

size. In particular, it is important to explore the association between past experiences of discrimination, harassment, and abuse and risky sexual behaviors.

At this time, there is a lot of work that must be done with transgender women in Pakistan, in regards to both research and intervention development. However, from the current study, as well as previous literature, there is evidence of a high prevalence of risky sexual behaviors, abuse, negative perceived attitudes, poor access to resources, and a lack of education and awareness regarding sexual health in this population. Therefore, it is necessary to focus on targeting these behaviors and gaps in knowledge in order to decrease marginalization and to begin integrating transgender women into Pakistani society.

Table 1: Personal Demographic Characteristics

	Overall
	Median (Range)
Age	37.5 (13.2)
	n (%)
Marital Status	
Unmarried	70 (85.37)
Ever Married (current, separated, divorced, widowed)	12 (14.63)
Education	
No Education	29 (35.37)
Some Education (Primary, Middle, Metric, Intermediate)	53 (64.63)
Living Arrangement	
Family Home	10 (12.20)
Dera	72 (87.80)
Sex at Birth	
Male	82 (100)
Gender Identity	
Transgender	82 (100)
Who Are You Open With About Gender Identity?	
Everyone	72 (87.80)
Only Friends	10 (12.20)
Ever Involved in Sex Work	
Yes	82 (100)
Currently Involved in Sex Work	
Yes	74 (90.24)
No	7 (8.54)
Main Source of Income Sex Work	
Yes	37 (45.12)
No	44 (53.66)
Knowledge that Sex Work is Illegal	
Yes	81 (98.78)
No	1 (1.22)
	Median (Range)
Number of Sexual Partners (Past 90 days)	35.00 (1-895) Q1 15 Q3 180

Table 2: Distribution of Perceived Attitudes

Perceived Attitudes Item	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	Missing/NA N (%)
I feel that others are accepting of my gender identification*	26(31.71)	11(13.41)	33(40.24)	12(14.63)	0(0)	0(0)
I feel that others believe my gender identification goes against Islamic principles	1(1.22)	41(50.00)	29(35.37)	6(7.32)	5(6.10)	0(0)
I feel that other are comfortable around me regardless of my gender identification*	20(24.39)	14(17.07)	28(34.15)	20(24.39)	0(0)	0(0)
I feel that others have excluded me because of my gender identification	7(8.54)	27(32.93)	34(41.46)	7(8.54)	7(8.54)	0(0)

*Items were reverse coded

Table 3: Distribution of Past Experiences

Past Experiences Item	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	Missing/NA N (%)
I have been discriminated against (i.e. at stores, restaurants, public offices, public transportation) because of my gender identification	7(8.54)	21(25.61)	37(45.12)	11(13.41)	6(7.32)	0(0)
I have been ridiculed for being too "feminine"	3(3.66)	19(23.17)	25(30.49)	24(29.27)	11(13.41)	0(0)
I have been ignored/avoided by others because of my gender identification	6(7.41)	23(28.40)	37(45.68)	11(13.58)	4(4.94)	1
I have experienced physical abuse (i.e. being hit, kicked, punched, slapped) because of my gender identification	16(19.75)	34(41.98)	22(27.16)	5(6.17)	4(4.94)	1
I have experienced sexual harassment (i.e. sexual jokes, gestures, comments) because of my gender identification	2(2.47)	23(28.40)	35(43.21)	13(16.05)	8(9.88)	1
I have experienced sexual violence (i.e. rape, forced kissing, forced touching) because of my gender identification	18(22.50)	42(52.50)	16(20.00)	3(3.75)	1(1.25)	2
I have been stopped from entering a religious building (i.e. Mosque, Church, Temple) because of my gender identification	72(87.80)	5(6.10)	2(2.44)	0(0)	3(3.66)	0(0)

Table 4: Distribution of Access to Resources and Support

Access to Resources and Support Item	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	Missing/NA N (%)
My gender identification did not prevent me from receiving an education*	23(28.40)	4(4.94)	28(34.57)	8(9.88)	18(22.22)	1
My gender identification did not prevent me from finding work outside of sex work*	11(13.41)	6(7.32)	26(31.71)	10(12.20)	29(35.37)	0(0)
My gender identification did not prevent me from accessing medical care*	76(92.68)	2(2.44)	1(1.22)	3(3.66)	0(0)	0(0)
My gender identification did not prevent me from finding doctors willing to treat me*	75(91.46)	2(2.44)	3(3.66)	0(0)	2(2.44)	0(0)
My gender identification did not prevent me from having the support of my friends*	69(84.15)	0(0)	3(3.66)	6(7.32)	4(4.88)	0(0)
My gender identification did not prevent me from having the support of my family*	49(59.76)	2(2.44)	18(21.95)	5(6.10)	8(9.76)	0(0)

*Items were reverse-coded

Table 5: Risky Sexual Behaviors (Continuous)

Risky Sexual Behaviors Item	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	Missing/NA N (%)
I used a condom with every partner in the past 90 days	46(56.10)	14(17.07)	8(9.76)	1(1.22)	13(15.85)	0(0)
I used a condom each time I had sex in the past 90 days	49(59.76)	13(15.85)	7(8.54)	0(0)	13(15.85)	0(0)
I used a condom each time I had anal sex in the past 90 days	47(57.32)	18(21.95)	3(3.66)	0(0)	14(17.07)	0(0)
I used a condom each time I had oral sex in the past 90 days	69(84.15)	5(6.10)	3(3.66)	0(0)	5(6.10)	0(0)

Table 6: Risky Sexual Behaviors (Dichotomous)

Risky Sexual Behaviors Item	Yes N (%)	No N (%)	Missing/NA N (%)
I used a condom with every partner in the past 90 days	36(43.90)	46(56.10)	0(0)
I used a condom each time I had sex in the past 90 days	33(40.24)	49(59.76)	0(0)
I used a condom each time I had anal sex in the past 90 days	35(42.69)	47(57.32)	0(0)
I used a condom each time I had oral sex in the past 90 days	13(15.85)	69(84.15)	0(0)
I have had unprotected sex with more than 1 partner in the past 1 month	64(78.05)	17(20.73)	1(1.22)
I often have sex with multiple sex partners during the same week	64(78.05)	18(21.95)	0(0)
I know how to properly use a condom	51(62.20)	31(37.80)	0(0)

Table 7: HIV/AIDS

HIV/AIDS Item	Yes N (%)	No N (%)	Missing/NA N (%)
I have heard about HIV/AIDS	72(87.80)	10(12.20)	0(0)
I have been tested for HIV/AIDS	44(53.66)	28(34.15)	10(12.20)
I have tested positive for HIV	1(1.22)	40(48.78)	41(50.00)

Table 8: STIs

STI Item	Yes N (%)	No N (%)	Missing/NA N (%)
I have heard about sexually transmitted infections (STIs) such as chlamydia, gonorrhea, syphilis, human papilloma virus	51(62.20)	30(36.59)	1(1.22)
I have been tested for STIs	21(25.61)	30(36.59)	31(37.80)
I have (or have previously had) an STI	8 (9.76)	16(19.51)	58(70.73)

Table 9: Spearman's Rho Correlation Matrix: Demographics and Risky Sexual Behaviors

Risky Sexual Behaviors	**Independent Variable**									
	Age		Ever Married		Educated (any vs. none)		Current Living Situation (dera vs. family home)		Open Gender ID (everyone vs. just friends)	
	r	p	r	p	r	p	r	p	r	p
Current Sex Work	0.11	0.32	0.13	0.26	-0.13	0.23	-0.11	0.31	0.02	0.86
Sex Work is Main Income	0.27	0.01**	-0.24	0.03**	-0.04	0.73	-0.03	0.77	0.27	0.02**
Condom Use with Every Partner (90 days)	-0.09	0.43	-0.09	0.43	0.19	0.08**	0.03	0.79	-0.05	0.68
Condom Use Each Time (90 days)	-0.11	0.33	-0.13	0.25	0.19	0.09**	0.00	0.99	0.00	0.99
Condom Use Each Time Anal (90 days)	-0.12	0.28	-0.08	0.48	0.23	0.04**	0.02	0.86	-0.06	0.62
Condom Use Each Time Oral (90 days)	-0.12	0.30	-0.18	0.11**	-0.03	0.80	-0.04	0.71	0.06	0.59
Unprotected Sex with more than 1 partner (1 month)	0.20	0.07**	-0.03	0.79	-0.15	0.19**	-0.02	0.88	-0.02	0.88
Multiple sex partners in the same week	0.25	0.02**	-0.11	0.31	-0.08	0.45	-0.11	0.34	0.07	0.52

*Dichotomous values for Risky Sexual Behaviors

** Significant $p<0.20$

Table 10: Spearman's Rho Correlation Matrix: Perceived Attitudes and Risky Sexual Behaviors/Demographics

Risky Sexual Behaviors	Perceived Attitudes	
	r	p
Current Sex Work	0.06	0.56
Sex Work is Main Income	0.04	0.74
Condom with Every Partner (90 days)	0.10	0.35
Condom Each Time (90 days)	.18	0.11**
Condom Each Time Anal (90 days)	0.10	0.36
Condom Each Time Oral (90 days)	0.13	0.25
Unprotected with more than 1 partner (30 days)	-0.12	0.28
Multiple sex partners in the same week	0.12	0.28
Demographics		
Age (years)	-0.11	0.36
Ever Married	-0.01	0.94
Educated (Any vs. None)	0.18	0.11**
Current Living Situation (dera vs. family home)	-0.01	0.96
Open about gender ID (everyone vs. just friends)	0.13	0.25

*Dichotomous values for Risky Sexual Behaviors

** Significant $p<0.20$

Table 11: Spearman's Rho Correlation Matrix: Past Experiences and Risky Sexual Behaviors/Demographics

Risky Sexual Behaviors	Past Experiences	
	r	p
Current Sex Work	0.02	0.87
Sex Work is Main Income	-0.20	0.07**
Condom with Every Partner (90 days)	0.09	0.42
Condom Each Time (90 days)	0.12	0.27
Condom Each Time Anal (90 days)	0.12	0.27
Condom Each Time Oral (90 days)	0.01	0.96
Unprotected with more than 1 partner (30 days)	0.01	0.96
Multiple sex partners in the same week	-0.09	0.42
Demographics		
Age (years)	-0.17	0.11**
Ever Married	0.15	0.17**
Educated (Any vs. None)	0.06	0.60
Current Living Situation (dera vs. family home)	0.03	0.78
Open about gender ID (everyone vs. just friends)	0.05	0.64

*Dichotomous values for Risky Sexual Behaviors

** Significant $p<0.20$

Table 12: Spearman's Rho Correlation Matrix: Access to Resources and Support and Risky Sexual Behaviors/Demographics

Risky Sexual Behaviors	Access to Resources and Support	
	r	p
Current Sex Work	0.10	0.35
Sex Work is Main Income	-0.22	0.04**
Condom with Every Partner (90 days)	0.07	0.52
Condom Each Time (90 days)	0.02	0.85
Condom Each Time Anal (90 days)	0.05	0.65
Condom Each Time Oral (90 days)	0.02	0.87
Unprotected with more than 1 partner (30 days)	-0.03	0.80
Multiple sex partners in the same week	-0.04	0.72
Demographics		
Age (years)	-0.04	0.72
Ever Married	0.01	0.91
Educated (Any vs. None)	0.07	0.53
Current Living Situation (dera vs. family home)	0.02	0.82
Open about gender ID (everyone vs. just friends)	0.06	0.57

*Dichotomous values for Risky Sexual Behaviors

** Significant $p<0.20$

Table 13: Multivariate Logistic Regression: Current Sex Work

Outcome: Current Sex Work	Regression Coefficient (B)	Wald Chi Square	P-Value	Odds Ratio (95%)
Likelihood Ratio		0.767	0.857	
Intercept	1.597	0.738	0.390	
Perceived Attitudes	-0.233	0.084	0.772	0.792 (0.164,3.835)
Past Experiences	0.167	0.041	0.840	1.182 (0.234, 5.974)
Access to Resources and Support	0.628	0.493	0.483	1.875 (0.324, 10.853)

Table 14: Multivariate Logistic Regression: Sex Work as Main Income

Outcome: Sex Work as Main Income	Regression Coefficient (B)	Chi Square	P-Value	Confidence Interval (95%) / Odds Ratio (95%)
Likelihood Ratio		19.484	0.0034*	
Intercept	4.148	2.125	0.145	
Perceived Attitudes	-0.088	0.027	0.868	0.916 (0.324, 2.590)
Past Experiences	-0.553	1.107	0.293	0.575 (0.205, 1.612)
Access to Resources and Support	-0.960	3.144	0.076	0.383 (0.132, 1.106)
Age	-0.066	2.592	0.107	0.936 (0.865, 1.014)
Married	1.187	1.734	0.188	3.278 (0.560 , 19.179)
Open About Gender Identity	-2.149	3.643	0.056	0.117 (0.013, 1.059)

*Significant $p<0.05$

Table 15: Multivariate Logistic Regression: Condom Use With Every Partner (90 days)

Outcome: Condom Use Every Partner	Regression Coefficient (B)	Chi-Square	P-Value	Confidence Interval (95%) / Odds Ratio (95%)
Likelihood Ratio		4.705	0.319	
Intercept	0.102	0.0056	0.940	
Perceived Attitudes	0.052	0.012	0.913	1.053 (0.413, 2.689)
Past Experiences	-0.524	1.226	0.268	0.592 (0.234, 1.497)
Access to Resources and Support	-0.154	0.105	0.746	0.857 (0.337, 2.179)
Educated	0.810	2.643	0.104	2.248 (0.847, 5.969)

Table 16: Multivariate Logistic Regression: Condom Use Each Time Sex (90 days)

Outcome: Condom Use Each Time Sex	Regression Coefficient (B)	Chi-Square	P-Value	Confidence Interval (95%) / Odds Ratio (95%)
Likelihood Ratio		5.721	0.221	
Intercept	0.367	0.070	0.791	
Perceived Attitudes	-0.198	0.169	0.681	0.820 (0.318, 2.113)
Past Experiences	-0.747	2.376	0.123	0.474 (0.183, 1.225)
Access to Resources and Support	0.261	0.286	0.592	1.299 (0.499, 3.381)
Educated	0.798	2.438	0.118	2.220 (0.816, 6.043)

Table 17: Multivariate Logistic Regression: Condom Use Each Time Anal Sex (90 days)

Outcome: Condom Use Anal Sex	Regression Coefficient (B)	Chi-Square	P-Value	Confidence Interval (95%) / Odds Ratio (95%)
Likelihood Ratio		6.397	0.171	
Intercept	0.009	0.000	0.995	
Perceived Attitudes	-0.003	0.00	0.995	0.997 (0.386, 2.572)
Past Experiences	-0.671	1.955	0.162	0.511 (0.200, 1.309)
Access to Resources and Support	0.006	0.000	0.991	1.006 (0.391, 2.589)
Educated	0.974	3.64	0.0564	2.649 (0.974, 7.207)

Table 18: Multivariate Logistic Regression: Condom Use Each Time Oral Sex (90 days)

Outcome: Condom Use Oral Sex	Regression Coefficient (B)	Chi-Square	P-Value	Confidence Interval (95%) / Odds Ratio (95%)
Likelihood Ratio		5.224	0.265	
Intercept	27.496	0.002	0.964	
Perceived Attitudes	-0.458	0.537	0.464	0.633 (0.186, 2.153)
Past Experiences	-0.258	0.159	0.690	0.774 (0.219, 2.733)
Access to Resources and Support	0.019	0.001	0.977	1.019 (0.286, 3.628)
Married	-12.508	0.002	0.967	<.001 (<0.001, >999.999)

Table 19: Multivariate Logistic Regression: Unprotected Sex with More than 1 Partner (1 month)

Outcome: Current Sex Work	Regression Coefficient (B)	Chi Square	P-Value	Confidence Interval (95%) / Odds Ratio (95%)
Likelihood Ratio		7.557	0.182	
Intercept	2.20	1.293	0.255	
Perceived Attitudes	-0.400	0.485	0.486	0.671 (0.218, 2.066)
Past Experiences	0.530	0.800	0.371	1.700 (0.532, 5.433)
Access to Resources and Support	0.110	0.035	0.852	1.116 (0.350, 3.559)
Age	-0.082	4.004	0.045	0.921 (0.850, 0.998)
Educated	0.909	1.852	0.173	2.482 (0.670, 9.187)

Table 20: Multivariate Logistic Regression: Multiple Sex Partners During the Same Week

Outcome: Multiple Partners In One Week	Regression Coefficient (B)	Chi-Square	P-Value	Confidence Interval (95%) / Odds Ratio (95%)
Likelihood Ratio		2.465	0.651	
Intercept	-0.131	0.006	0.936	
Perceived Attitudes	0.349	0.367	0.544	1.418 (0.458, 4.387)
Past Experiences	-0.426	0.568	0.451	0.653 (0.216, 1.977)
Access to Resources and Support	0.653	1.25	0.263	1.921 (0.612, 6.034)
Educated	0.498	0.688	0.407	1.645 (0.508, 5.332)

Table 21: Multivariate Linear Regression: Condom Use Every Partner (90 days)

Outcome: Condom Use Every Partner	Regression Coefficient (B)	F-Value / t-value	P-Value
Model		0.72	0.578
Intercept	3.005	2.80	0.006*
Perceived Attitudes	-0.070	-0.93	0.356
Past Experiences	0.022	0.4	0.678
Access to Resources and Support	-0.003	-0.07	0.944
Educated	-0.438	.1.26	0.211

*Significant $p<0.05$

Table 22: Multivariate Linear Regression: Condom Use Each Time Sex (90 days)

Outcome: Condom Use Each Time	Regression Coefficient (B)	F-Value / t-value	P-Value
Model		2.80	0.032*
Intercept	1.540	4.97	<.0001*
Perceived Attitudes	-0.158	-1.46	0.147
Past Experiences	-0.233	-2.16	0.033*
Access to Resources and Support	0.113	1.04	0.303
Educated	0.180	1.64	0.105

*Significant $p<0.05$

Table 23: Multivariate Linear Regression: Condom Use Every Time Anal Sex (90 days)

Outcome: Condom Use Anal Sex	Regression Coefficient (B)	F-Value / t-Value	P-Value
Model		0.92	0.455
Intercept	2.933	2.74	0.0077
Perceived Attitudes	-0.052	-0.69	0.491
Past Experiences	0.011	0.21	0.837
Access to Resources and Support	0.013	0.28	0.784
Educated	0.572	-1.65	0.103

Table 24: Multivariate Linear Regression: Condom Use Every Time Oral Sex (90 days)

Outcome: Condom Use Oral Sex	Regression Coefficient (B)	F-Value / t-value	P-Value
Model		1.14	0.346
Intercept	1.154	1.30	0.199
Perceived Attitudes	-0.080	-1.56	0.123
Past Experiences	0.026	0.69	0.492
Access to Resources and Support	-0.013	-0.39	0.698
Married	0.412	1.28	0.206

Table 25: Chi Squared: Perceived Attitudes and Risky Sexual Behaviors

	Current Sex Work	Sex work in my main source of income	I used a condom with every partner in the past 90 days	I used a condom each time I had sex in the past 90 days	I used a condom each time I had anal sex in the past 90 days	I used a condom each time I had oral sex in the past 90 days	I have had unprotected sex with more than 1 partner in the past week	I often have sex with multiple partners during the same week
	X^2 P -value	**X^2 P -value**	**X^2 P -value**	**X^2 P -value**	**X^2 P -value**	**X^2 P -value**	**X^2 P -value**	**X^2 P -value**
I feel that others are not accepting of my gender identification	0.016 0.900	1.316 0.251	1.519 0.218	1.981 0.159	0.981 0.322	6.310 0.012*	1.014 0.314	0.362 0.547
I feel that others believe my gender identification goes against Islamic principles	1.251 0.263	0.106 0.745	0.038 0.845	0.002 0.965	0.171 0.679	2.006 0.157	0.903 0.342	0.173 0.677
I feel that others are not comfortable around me because of my gender identification	2.329 0.127	3.176 0.074	3.385 0.066	3.893 0.048*	2.489 0.114	0.976 0.323	1.887 0.169	1.780 0.182
I feel that others have excluded me because of my gender identification	0.775 0.379	1.947 0.163	0.877 0.349	1.122 0.289	1.271 0.260	0.728 0.393	1.887 0.169	0.628 0.428

*Significant P<0.05

Table 26: Chi Squared: Past Experiences and Risky Sexual Behaviors

	Current Sex Work X^2 **P -value**	Sex work in my main source of income X^2 **P -value**	I used a condom with every partner in the past 90 days X^2 **P -value**	I used a condom each time I had sex in the past 90 days X^2 **P -value**	I used a condom each time I had anal sex in the past 90 days X^2 **P -value**	I used a condom each time I had oral sex in the past 90 days X^2 **P -value**	I have had unprotected sex with more than 1 partner in the past week X^2 **P -value**	I often have sex with multiple partners during the same week X^2 **P -value**
I have been discriminated against because of my gender identification	0.106 0.745	3.160 0.075	0.642 0.423	0.676 0.411	0.930 0.335	0.991 0.320	1.458 0.227	0.007 0.934
I have been ridiculed for being too "feminine"	0.012 0.913	5.464 0.019*	0.454 0.500	1.190 0.275	0.658 0.417	1.031 0.310	0.249 0.617	0.249 0.617
I have been ignored/avoided because of my gender identification	1.032 0.310	0.665 0.415	0.513 0.474	0.477 0.490	0.303 0.582	2.193 0.139	0.270 0.603	0.270 0.603
I have experienced physical abuse because of my gender identification	0.067 0.796	1.502 0.220	4.831 0.028*	2.852 0.091	4.114 0.042*	6.129 0.013*	0.239 0.625	0.004 0.951
I have experienced sexual harassment because of my gender identification	0.516 0.472	1.885 0.170	0.836 0.360	1.899 0.168	1.139 0.286	0.000 0.993	2.000 0.157	9.922 0.002*
I have experienced sexual violence because of my gender identification	1.305 0.253	0.335 0.563	1.077 0.299	0.430 0.512	0.830 0.362	1.500 0.221	0.860 0.354	0.096 0.757
I have been stopped from entering a religious building because of my gender identification	0.896 0.343	0.069 0.792	1.235 0.266	0.907 0.341	1.120 0.290	1.003 0.316	0.012 0.913	0.012 0.913

*Significant P<0.05

Table 27: Chi Squared: Access to Resources and Support and Risky Sexual Behaviors

	Current Sex Work	Sex work in my main source of income	I used a condom with every partner in the past 90 days	I used a condom each time I had sex in the past 90 days	I used a condom each time I had anal sex in the past 90 days	I used a condom each time I had oral sex in the past 90 days	I have had unprotected sex with more than 1 partner in the past week	I often have sex with multiple partners during the same week
	X^2 **P -value**	**X^2** **P -value**	**X^2** **P -value**	**X^2** **P -value**	**X^2** **P -value**	**X^2** **P -value**	**X^2** **P -value**	**X^2** **P -value**
My gender identification prevented me from receiving an education	1.251 0.263	0.498 0.481	0.000 1.000	0.920 0.337	0.101 0.751	0.046 0.830	0.000 1.000	0.000 1.000
My gender identification prevented me from finding work outside of sex work	2.002 0.157	0.935 0.333	0.087 0.768	0.414 0.520	0.168 0.682	0.052 0.820	0.031 0.860	2.229 0.135
My gender identification prevented me from accessing medical care	0.392 0.531	1.458 0.227	3.291 0.070	2.832 0.092	3.131 0.077	0.792 0.373	1.183 0.277	1.183 0.277
My gender identification prevented me from finding doctors willing to treat me	0.497 0.481	0.440 0.507	4.167 0.041*	3.586 0.058	3.965 0.046*	1.003 0.316	1.498 0.221	1.498 0.221
My gender identification prevented me from having the support of my friends	0.014 0.905	0.091 0.762	0.620 0.431	0.224 0.636	0.787 0.375	0.604 0.437	0.389 0.533	0.011 0.915
My gender identification prevented me from having the support of my family	0.277 0.598	2.318 0.128	0.546 0.460	0.470 0.493	0.322 0.571	0.003 0.957	0.986 0.321	0.011 0.914

*Significant P<0.05

Figure 1: Social Cognitive Theory

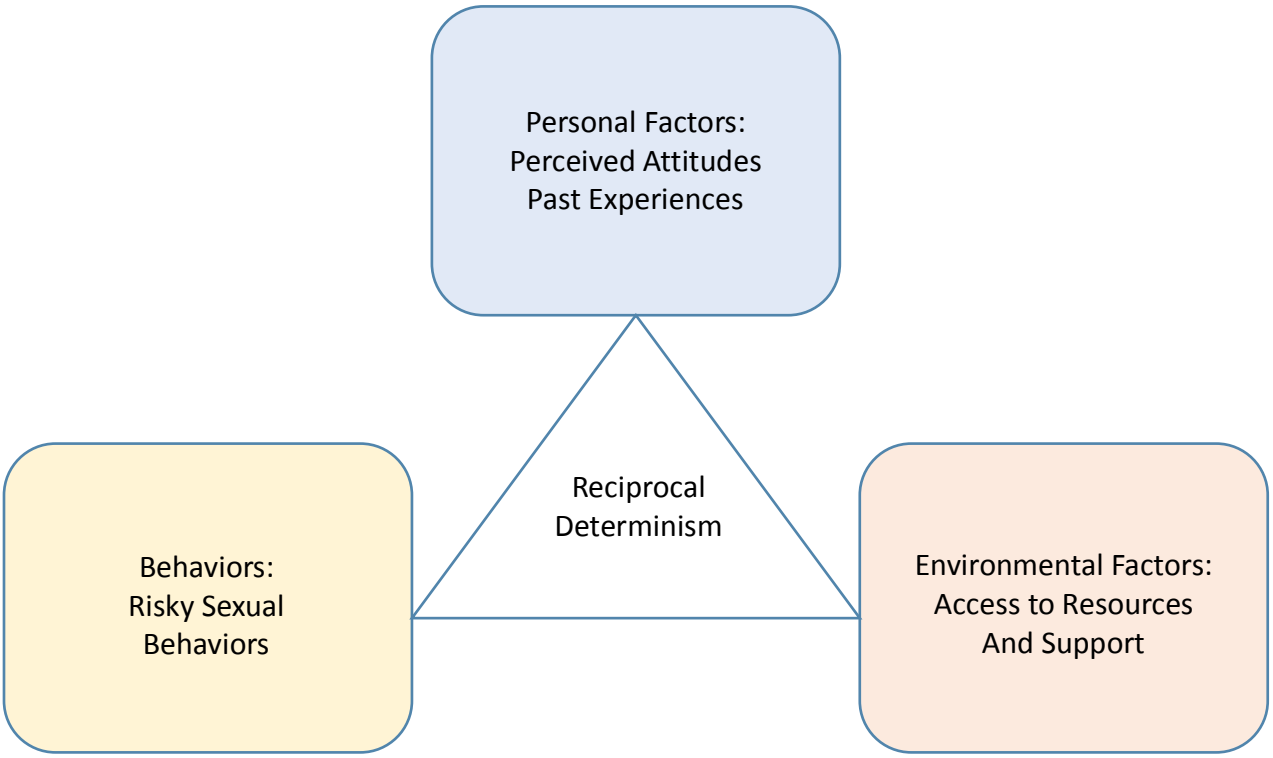


Figure 2: Social Structure of Transgender Women's Community

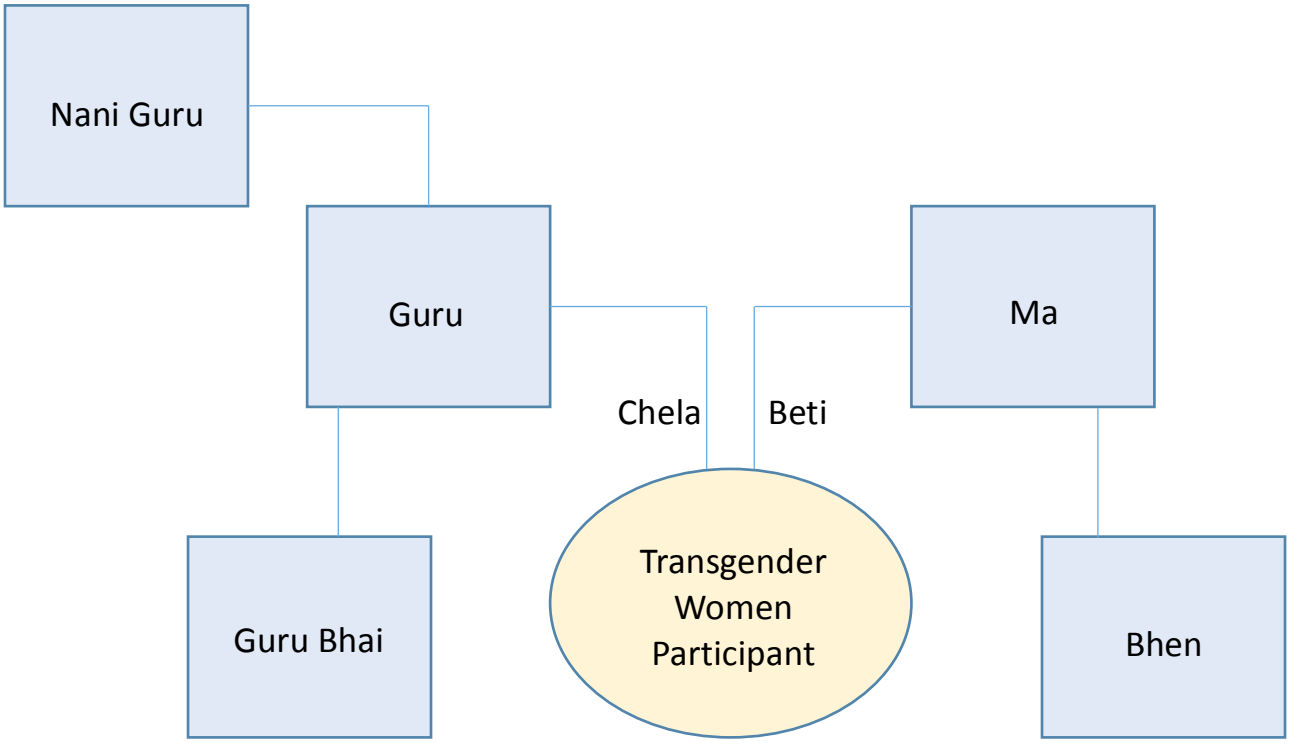
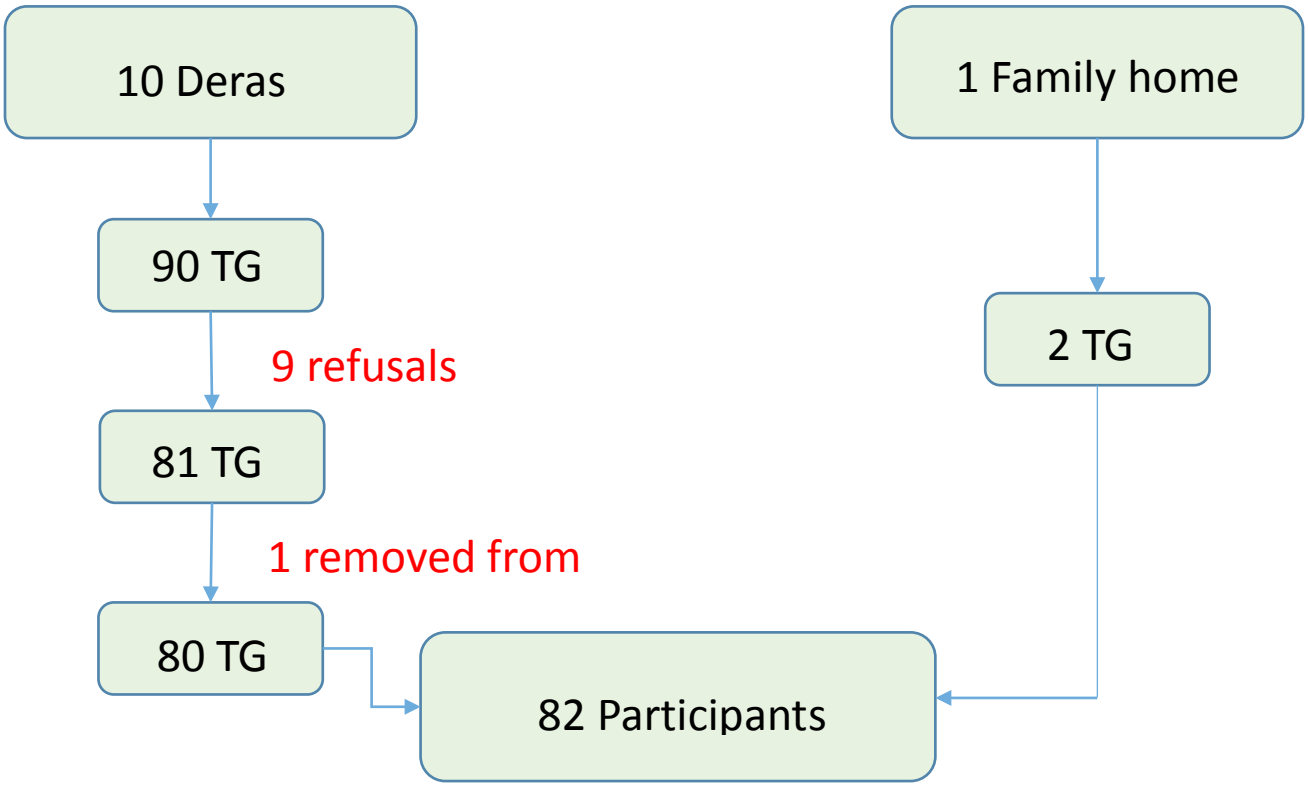


Figure 3: Sampling Procedure



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Appendices

Appendix A. Survey Instrument

Transgender Questionnaire

Section 1: Socio-Demographic Characteristics

The following twelve items cover basic demographic information. For questions with blanks, write the answer in the space. For other questions choose the answer that fits best.

1. What is your age? (in years) _____ years

2. What city are you originally from? _____

3. What is your current marital status?
   a) Unmarried b) Currently Married c) Separated
   d) Divorced e) Widowed

4. What is your level of education?
   a) Uneducated/Illiterate b) Primary c) Middle d) Metric
   e) Intermediate f) Graduate

5. What is your current living arrangement?
   a) Family home b) Dera c) Shrine/Darbar d) Street/Lane
   e) Hostel f) Guest house/hotel g) other

6. Please specify your sex at birth:
   Male_____

   Female_____

7. Which of the following best describes how you identify yourself:
   Male _____

   Female_____

   Transgender_____

   Other (please specify) _____

8. Please check all that apply:
   I am open about my gender identification with everyone _____

   I am open with my family about my gender identification _____

   I am open with my friends about my gender identification _____

9. Have you ever been involved in sex work?
   Yes No

10. If yes, are you currently involved in sex work? (If no, go to number 12)
    Yes No

11. Is sex work your main source of income?
    Yes No

12. I am aware that sex work is illegal
    True False

Section 2: Perceived Attitudes

The following six items are statements about how you perceive others' attitudes towards you. Please answer each question on a scale of 1-5. (1 = strongly disagree, 2 = disagree, 3 = somewhat agree, 4= agree, 5=strongly agree)

I feel that others…

1. …are accepting of my gender identification
   1 2 3 4 5

(strongly disagree) (strongly agree)

2. …believe my gender identification goes against Islamic principles
   1 2 3 4 5

(strongly disagree) (strongly agree)

3. …are comfortable around me regardless of my gender identification

1 2 3 4 5

(strongly disagree) (strongly agree)

4. …have excluded me because of my gender identification

1 2 3 4 5

(strongly disagree) (strongly agree)

Section 3: Past Experiences

The following seven items are statements about previous experiences with other people. Please respond to each statement on a scale of 1-5. (1=Never, 2=Rarely, 3 = Sometimes, 4=Often, 5=Always)

1. I have been discriminated against (i.e. at stores, restaurants, public offices, public transportation) because of my gender identification

   1 2 3 4 5

   (Never) (Always)

2. I have been ridiculed for being too "feminine"

   1 2 3 4 5

   (Never) (Always)

3. I have been ignored/avoided by others because of my gender identification

   1 2 3 4 5

   (Never) (Always)

4. I have experienced physical abuse (i.e. being hit, kicked, punched, slapped) because of my gender identification

   1 2 3 4 5

   (Never) (Always)

5. I have experienced sexual harassment (i.e. sexual jokes, gestures, comments) because of my gender identification

   1 2 3 4 5

   (Never) (Always)

6. I have experienced sexual violence (i.e rape, forced kissing, forced touching) because of my gender identification

   1 2 3 4 5

   (Never) (Always)

7. I have been stopped from entering a religious building (i.e. Mosque, Church, Temple) because of my gender identification

   1 2 3 4 5

   (Never) (Always)

Section 4: Resources and Support

The following six items are statements about access to resources and support. Please respond to each statement on a scale of 1-5. (1 = strongly disagree, 2 = disagree, 3 = somewhat agree, 4= agree, 5=strongly agree)

My gender identification did not prevent me from…

1. …receiving an education

   1 2 3 4 5

(strongly disagree) (strongly agree)

2. …finding work outside of sex work

   1 2 3 4 5

(strongly disagree) (strongly agree)

3. …accessing medical care

1 2 3 4 5

(strongly disagree) (strongly agree)

4. …finding doctors willing to treating me
   1 2 3 4 5

(strongly disagree) (strongly agree)

5. …having the support of my friends
   1 2 3 4 5

(strongly disagree) (strongly agree)

6. …having the support of my family
   1 2 3 4 5

(strongly disagree) (strongly agree)

Section 5: Risky Sexual Behaviors

The following eight items are statements regarding sexual behaviors. Please respond to each statement as instructed.

1. How many sexual partners have you had in the past 90 days?(If 0, skip to question 8 in this section) _____
   a) How many of these were male: _____
   b) How many of these were female:_____

2. I used a condom with **every** partner in the past 90 days
   1 2 3 4 5

   (Never) (Always)

3. I used a condom **each time** I had sex in the past 90 days
   1 2 3 4 5

   (Never) (Always)

4. I used a condom **each time** I had anal sex in the past 90 days
   1 2 3 4 5

   (Never) (Always)

5. I used a condom **each time** I had oral sex in the past 90 days
   1 2 3 4 5

   (Never) (Always)

6. I have had unprotected sex with more than 1 partner in the past one month
   Yes No

7. I often have sex with multiple sex partners during the same week
   Yes No

8. I know how to properly use a condom
   Yes No

Section 6: HIV/AIDS and STI

The following six items discuss HIV/AIDS and other STIs. Please answer each question as instructed.

1. I have heard about HIV/AIDS
   Yes No

2. I have been tested for HIV/AIDS
   Yes No

3. I have tested positive for HIV
   Yes No

4. I have heard about sexually transmitted infections (STIs) such as Chlamydia, Gonorrhea, Syphilis, Human Papilloma Virus
   Yes No

5. I have been tested for other STIs
   Yes No

6. I have (or have previously had) an STI
   Yes No

Appendix B. Informed Consent

Emory University

Consent to be a Research Subject

Title: An Examination of the Association Between Social Exclusion and Risky Sexual Behaviors Among Hijras in Karachi, Pakistan.

Principal Investigator: Sharmeen Hussain B.A. 2012, MPH Candidate 2016 Behavioral Sciences and Health Education Rollins School of Public Health, Emory University.

Funding Source: Self

Introduction

You are being asked to be in a research study. This form is designed to tell you everything you need to think about before you decide to consent (agree) to be in the study or not to be in the study. **It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study. You can skip any questions that you do not wish to answer.**

Before making your decision:

- Please carefully read this form or have it read to you
- Please ask questions about anything that is not clear

You can take a copy of this consent form, to keep. Feel free to take your time thinking about whether you would like to participate. By signing this form you will not give up any legal rights.

Study Overview

The purpose of this study is to explore the life experiences of the transgender community in Karachi, Pakistan and how these may relate to their sexual health.

Procedures

Participation in this study will last approximately 30-45 minutes. The entire study will take place in one session. If you agree to be in the study, you will complete a survey with questions about social exclusion and risky sexual behaviors. If you are not able to read the survey, an interviewer will read the questions to you and record your answers. All surveys will be done in private (alone or with 1 interviewer).

Risks and Discomforts
Foreseeable risks and discomforts for this study include: (1) Responding to questions about uncomfortable experiences, (2) Responding to questions on topics that are seen as taboo in this society, (3) Discomfort in giving these responses to an interviewer, (4) Possible risk of breach of confidentiality.

Benefits
This study is not designed to benefit you directly. This study is designed to learn more about the difficulties faced by the transgender community in Karachi, Pakistan. The study results may be used to help others in the future.

Compensation
You will get Rs 400 and transportation to and from the site for being in the study.

Confidentiality

All survey responses will be kept confidential. Only the interviewer and main research investigator will have access to the questionnaires and responses, which will not include any identifiers (ex. Names).

Certain offices and people other than the researchers may look at study records. Government agencies and Emory employees overseeing proper study conduct may look at your study records. These offices include the Emory Institutional Review Board,. Emory will keep any research records we create private to the extent we are required to do so by law. A study number rather than your name will be used on study records wherever possible. Your name and other facts that might point to you will not appear when we present this study or publish its results.

Study records can be opened by court order. They may also be produced in response to a subpoena or a request for production of documents.

Voluntary Participation and Withdrawal from the Study
You have the right to leave the study at any time without penalty. If you choose to leave the study, the survey questions that have been answered will be used in the research. You may refuse to answer any questions that you do not wish to answer.

Contact Information
Contact Sharmeen Hussain at 0302-829-7627 or 973-820-7743 or sharmeen.hussain@emory.edu:

- if you have any questions about this study or your part in it, or
- if you have questions, concerns or complaints about the research

Contact the Emory Institutional Review Board at 404-712-0720 or irb@emory.edu:

- if you have questions about your rights as a research participant.
- if you have questions, concerns or complaints about the research.
- You may also let the IRB know about your experience as a research participant through our Research Participant Survey at http://www.surveymonkey.com/s/6ZDMW75.