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Awareness And Knowledge Of HIV/AIDS Among Female Indian University Students In South India And As Immigrants In The U.S.-Mexico Border Region

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AWARENESS AND KNOWLEDGE OF HIV/AIDS AMONG FEMALE INDIAN
UNIVERSITY STUDENTS IN SOUTH INDIA AND AS IMMIGRANTS
IN THE U.S.- MEXICO BORDER REGION

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2010

DEDICATION

To

Divya, Aparna and Preethi – for being my constant source of inspiration

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UNIVERSITY STUDENTS IN SOUTH INDIA AND AS IMMIGRANTS
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by

THENRAL MANGADU, M.B.B.S, M.P.H

DISSERTATION

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ABSTRACT

The prevention of HIV/AIDS is a major global public health goal. The Joint United Nations Programme on HIV and AIDS (UNAIDS) estimates that 33 million individuals are infected with HIV worldwide and over two million of these cases are from India. The main mode of transmission of HIV in India is heterosexual contact.

In the past decades there has been a steady increase in immigration rates from India to the U.S. Education and marriage are the main reasons for immigration from India to the U.S. In general, the frequently risky sexual and substance use behaviors of college students in India and U.S. place them at risk for infection with HIV. India currently accounts for the highest number of foreign students attending U.S. Universities and at least 300 Indian students are enrolled per semester in the Paso del Norte border region universities in West Texas and Southern New Mexico.

Prevention of HIV/AIDS is a major health concern in the U.S.-Mexico border and the factors affecting HIV vulnerability and risk must be understood with relevance to all sub-groups in the region in order to implement effective HIV prevention strategies. The large number of Indian college students in the region comprises one of these subgroups and, unique factors related to immigration may be affecting their HIV vulnerability, risk and resilience.

Research shows that migration can affect perceptions about sexuality and sexual relations to reconstructs norms that can affect HIV risk behaviors. Acculturation and acculturative stress may also influence HIV risk in immigrant populations by modifying their HIV risk behaviors. Indian women in particular are seen to be at high risk for HIV due to traditional social norms and gender expectations. These norms may interact with factors in their receiving environment (U.S.)

to affect their HIV vulnerability, risk and resilience and, may also cause certain individuals to exhibit positive deviance with respect to reducing their HIV risk. However, there is a dearth of studies comparing the factors in the sending and receiving environments affecting the HIV risk of immigrant populations, at the same point in time. The concomitant comparison of both environments is essential to the understanding of how migration can affect HIV risk through reconstructions of norms since both these environments are dynamic and evolving. Helping to close this research gap is the main goal of the present qualitative exploratory study which derives its multi-level theoretical framework from constructs the Health Belief Model, Social Learning Theory, Culture Theory, Theory of Social Proximity of HIV and AIDS, and John Berry's Acculturation Model.

The specific aims of this qualitative research are (1) to investigate the specific knowledge and attitudes regarding HIV/AIDS among female Indian University students in South India, and female Indian students as immigrants in the U.S.-Mexico border region; (2) to explore perceived individual and community risk of HIV infection among female Indian university students in relation to their initial acculturation process; and (3) to investigate the interaction between the sending and receiving environments, and the female Indian university students, and compare factors which affect their vulnerability, risk and resilience for HIV infection as students, immigrants, and women.

The data collection in the U.S. involved individual in-depth interviews with 15 female Indian university students, two focus group interviews with 6 female and 5 male Indian university students, respectively, and in-depth interviews with 6 local border area key informants. In India, the data collection included individual in-depth interviews with 21 female university students, two focus group interviews consisting of 10 female and 10 male university

students each, and 9 individual in-depth interviews with local key informants from a South Indian city.

The study results indicated that personal HIV risk perception may not be related to having adequate knowledge of HIV/AIDS and awareness about HIV risk behaviors within immediate social networks. HIV risk behaviors prevalent in the social networks of the participants may be shaped by factors in both their sending and receiving environments such as structural and social norms. Structural inequalities may co-factor with socio-cultural and gender norms to magnify female Indian college students' risk for HIV through heterosexual contact. Study findings also indicate the evidence of positive deviance with respect to HIV risk reduction in the study population. The current study findings shed light on the multiple migration-related contexts which may intersect to shape the vulnerability, risk and resilience of the South Indian female college students in the U.S. to HIV, and their implications for HIV/AIDS prevention research.

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CHAPTER 1: INTRODUCTION, SPECIFIC AIMS AND STUDY

RATIONALE

1.1 INTRODUCTION

“In 2021, undoubtedly there will still be an AIDS epidemic...The next 20 years can be different, but only if we act now” Steinbrook & Drazen (2001) quoted in the New England Journal of Medicine.

As of December 2008, there were 33.4 million individuals living with HIV worldwide of which 15.7 million individuals were women (UNAIDS, 2009). There has been an increase of 20% in the number of people living with HIV worldwide in comparison to the prevalence of HIV in 2000. About 2.6 million people were infected with HIV in 2008 alone of which 430,000 individuals are children under the age of 15 years (UNAIDS, 2009). Current UNAIDS (2009) statistics show that 3.8 million individuals living with HIV in South and South-east Asia and that 1.4 million individuals are living with HIV in North America as of 2008. India reports 2.3 million cases of HIV as of 2007 (Avert, 2009) and the main mode of transmission of HIV infection in India is heterosexual contact (UNAIDS, 2006). Reportedly monogamous married women in India constitute one of the highest risk group for HIV infection in India (Newman et al., 2000; Hawkes & Santhya, 2002) and a large proportion of Indian women are infected with HIV due to sexual contact with regular partners who have been infected during paid sex (UNAIDS, 2006).

The UNAIDS (2009) also reports a growth of HIV transmission among heterosexual populations in Asia which are traditionally considered as being low risk for HIV (UNAIDS, 2009). Recent research reports that HIV positive Indian women are at risk for marital

dissatisfaction, and domestic violence and, are also more likely to report being forced to have sexual intercourse (Gupta et al., 2008). The fact that HIV positive married Indian women increasingly indicate that their husbands engage in extra-marital sex (Gupta et al., 2008) may place married and reportedly monogamous Indian women at higher risk for HIV when coupled with the norm that condom usage is difficult to enforce in intimate relationships (Kambou et al., 2008). Condom use is difficult to enforce even among the intimate sex partners of Indian female sex workers including their regular customers (Kambou et al., 2008). This helps demonstrate the magnitude of HIV risk and vulnerability among Indian women in general.

Immigration from India to the U.S. increased by 72% from 1990 to 2000 (Shelley et al., 2004). Immigrant populations constantly travel between India and the U.S. and maybe socializing and having sexual contacts in one or both the countries during such travel (Shedlin et al., 2006). Indian-Americans are classified as Asian-American and Pacific Islanders (AAPIs). They are more likely to be diagnosed with advanced stages of AIDS when compared to other racial and ethnic minorities in the U.S. (Wong et al., 2004). AAPIs are also more likely to have opportunistic infections when diagnosed with AIDS (Wong et al., 2004). This makes the treatment and control of HIV/AIDS more difficult in this population.

Marriage and education are often venues for immigration (Berry, 2005). Immigration to a new country involves the process of acculturation. Acculturation is the process of cultural and psychological change that takes place as a result of contact between cultural groups and their individual members (Berry, 2005). It involves acquisition of both desirable and undesirable health behaviors. The effect of acculturation on health-related behaviors such as breast cancer, parenting attitudes, hypertension, cardiovascular and HIV has been studied (Islam, Kwon, Senie,

& Kathuria, 2006; Jambunathan & Counselman, 2002; Wong et al., 2005; Ivey et al., 2004; Shedlin et al, 2006).

The largest number of foreign students attending colleges in the U.S. comes from India. About 80,000 (approximately 1/6th) of the 570,000 foreign students studying in the U.S. are from India (U.S. Department of State, 2004). In 2003, India accounted for the second largest number of legal immigrants to the U.S., second only to Mexico (Department of Homeland Security, 2007). Currently there are 2,272 international students attending the University of Texas at El Paso, of whom 429 students are from countries other than Mexico. The New Mexico State University in Las Cruces, NM reports enrollment of 700 international students from more than 70 countries (NMSU, 2008). The Indian Students Association in NMSU is one of the largest student associations in the University and, reports about 150 active student members (ISA, NMSU 2008). At least 300 Indian students attend Universities in El Paso, TX and Las Cruces, NM each semester (ISA, UTEP, 2009; NMSU, 2008).

Acculturation can play a crucial role in dictating the HIV risk behaviors of immigrants from India given the diversity between Indian and American cultures, and the social norms which govern these. In addition, the culture of the U.S.-Mexico border region by itself may influence the process of acculturation of different immigrant groups in the region (Ganster & Lorey, 2008; Martinez 1994). This “border culture” is characterized by diversity in language, asymmetry in resources and geography, power differentials dictating social norms and gender roles and inequality in structure (Ganster & Lorey, 2008; Fonner, 2003; Hondagneu-Sotelo, 1999). Such diversity and discrepancy in the receiving environment of an immigrant may cause stress. Acculturation stress associated with immigration is shown to increase risk behaviors which includes HIV risk behavior (Shedlin et al., 2006). Support in the form of social networks

is desired by immigrants irrespective of their educational levels. This is reported generally to be acquired from peers of similar age and ethnic background (Shedlin et al., 2006). Hence, the nature of the information exchanged and the networks in which they are informed can affect the vulnerability and risk of Indian immigrants to health conditions such as HIV/AIDS.

In general, the characteristics of the receiving environment can play a critical role in shaping the type and extent of social and risk-potential networks of an immigrant (Deren et al., 2006; Friedman & Aral, 2001). The magnitude and intensity of environmental influences on the risk behavior of immigrants in the U.S.-Mexico border region may be significantly different due to the complexities in the region. The U.S.-Mexico border region extends 62 miles on either side of the 2,000-mile U.S.-Mexico border and is home to about twelve million individuals (CHC Border Health Policy Forum, 2006). High fertility and international migration are reasons for the high rate of population growth in the border region.

El Paso County, TX has a total population of 713,126. Of those, 1,568 are people living with HIV/AIDS (PLWHA) as of 2007. There are 1,576 cumulative HIV and AIDS cases as of 2009 in the El Paso region with 209 of these infections occurring in women (Texas Department of Health, 2009). The Texas Department of State Health Services reports 34 new HIV cases and 30 new AIDS cases in El Paso County as of June 2009 (TDH, 2009). Southwestern NM reports 144 cumulative cases of HIV and 302 cumulative AIDS cases as of 2006 (New Mexico Department of Health, 2006). The unwillingness to promote condom use (Hirsh, 2003), HIV stigma (Parra, 2001), stressful conditions experienced by Mexican immigrants (Bronfman, 1998), and lower adherence to HIV prevention strategies (Organista, 1998) contribute to raising the risk for HIV in the U.S.-Mexico border population.

In addition, the history of the border region has shaped issues such as internal and transborder migration, immigration policy, employment, social segregation and discrimination, cultural biases, health and, access to health care since the early 1800s. This creates a social and environmental structure with unique border phenomena (Ganster & Lorey, 2008; Richardson, 1999). U.S.-Mexico binational phenomena dictate processes related to the above issues. The ever-increasing immigration flow from Mexico stresses the need to understand the influence of socio-cultural norms of the border population in relation to the contexts of health outcomes in the border region. In addition, the contexts of Mexican and Mexican-American cultural norms require examination due to potential implications for the health outcomes of other immigrant groups in the border region.

To summarize, the U.S. is experiencing high rates of immigration. Mexico and India are two countries which contribute the largest number of immigrants. Marriage and education are major venues for immigration from India to the U.S. India also accounts for the highest number of foreign students studying in the U.S. The HIV/AIDS epidemic is a major global health concern. HIV risk in immigrant populations in the U.S. may be shaped by factors in the immigrants' sending and receiving environments. These factors must be understood for all immigrant populations with respect to their HIV risk and resilience. However, there is a need for culturally sensitive HIV prevention programs for female AAPI in the U.S. (Asian Pacific Islander Wellness Center, 2006). In addition, the intra and inter-group cultural variations within these broadly classified groups must be kept in mind while addressing HIV risk reduction for these individuals.

Prior studies suggest that college students in the U.S. are at risk for HIV compared to the general population. Immigration from another country can add a new dimension to the HIV risk

of college students. The present study focuses on female Indian college students in the Texas/New Mexico – Mexico border region. These students are migrants from a region of high HIV prevalence (India) to a region with unique binational phenomena (U.S.-Mexico border region). The contexts which influence the HIV risk for female Indian students may vary from contexts which influence HIV risk in other immigrant/college student groups. However, these contexts also may have implications for HIV prevention among all college students in the U.S.

Many studies have focused on the HIV risk of Hispanic immigrants in the U.S.-Mexico border region compared to non-Hispanic immigrant populations. This research study focused on the HIV risk and resilience of another important immigrant minority population. This research focuses on women from India pursuing higher education in the border region, owing to the high prevalence of HIV among Indian women of child-bearing age, and the rising concern of HIV as a public health disparity in the U.S.-Mexico border region.

Female university students from Southern States of India were selected as the study population in order to be able to obtain a comparable sample in both environments. The vast regional variations in India dictated that the study samples in the U.S. and India be comparable at least at the main regional level. The current study probes the socio-cultural contexts of HIV awareness, knowledge and risk of female South Indian college students with respect to their sending environment (South India) and receiving environment (El Paso, TX, USA) at the same point in time. The factors which may influence the study population's vulnerability, risk and resilience for HIV in both environments and their interactions were explored.

1.2 SPECIFIC AIMS OF THE STUDY:

1. To investigate the awareness and specific knowledge of HIV and AIDS among female Indian University students in the U.S.-Mexico border region (El Paso, TX and Las Cruces, NM)
2. To explore perceived individual and community risk of HIV infection among female Indian university students in relation to their initial acculturation process
3. To investigate the interaction between the sending and receiving environment and female Indian university students, and the factors which influence their vulnerability, risk and resilience for HIV infection as students, immigrants, and women.

1.3 STUDY RATIONALE:

Women in India, particularly reportedly monogamous women, are at high risk for HIV. Immigration to the U.S. from India is steadily increasing and, education and marriage are venues for immigration. India accounts for the largest number of foreign students attending U.S. universities. There are an increasing number of female and male Indian students attending Universities in the U.S. At least 300 Indian students attend Universities in El Paso, TX and Las Cruces, NM (ISA, UTEP, 2009 & NMSU, 2008). High risk behaviors in immigrant populations in the U.S. are related to initial acculturation stress (Shedlin et al., 2006). Immigrant populations in the U.S. in general and, the U.S.-Mexico border region in particular can be prone to social isolation, segregation, unemployment, exploitation in the workplace, and lack of access to culturally appropriate health information and health care services. Female Indian immigrant students may be at high risk for HIV because of differences in perceptions of gender roles, sexuality, health and illness, knowledge of HIV/AIDS, and the acculturation process in the U.S. Interaction between the sending environment (India) and receiving environment (El Paso,

TX/Las Cruces, NM, USA) and factors unique to living in the U.S.- Mexico border region may influence the risk for HIV infection of female Indian University students in the El Paso, TX/Las Cruces, NM. Since these environments are constantly evolving, it is important to examine factors in both the sending and receiving environments of the study population at the same point in time.

CHAPTER 2: STUDY BACKGROUND AND SIGNIFICANCE

2.1 HIV IN INDIAN WOMEN

The first case of Human Immunodeficiency Virus (HIV) infection in India was reported in 1986 (Godbole & Mehendale, 2005). There have been 24,087 cases of AIDS and 98,451 HIV infections diagnosed in India as of June 2001, with almost eighty-one percent of the infections acquired through heterosexual contact (Hawkes & Santhya, 2002). About 8.6 million individuals infected with HIV were living in Asia as of 2006 (UNAIDS, 2006). India reported 5.7 million cases of HIV in 2006 (UNAIDS, 2006) with the main mode of transmission of HIV infection being heterosexual contact (UNAIDS, 2006). In 2007, the National AIDS Control Organization (NACO) supported by the World Health Organization (WHO) and UNAIDS used newer estimation methods and revised this estimate to 2 to 3.1 million people living with HIV in India. India reported 2.3 million cases of HIV as of 2007 (Avert, 2009). This estimate is still alarming considering the high population and incidence of risk behaviors in India. As Dr. Anbumani Ramadoss, the Union Minister for Health and Family Welfare of India notes:

“...the new figures still point towards a serious epidemic with potential to expand if the prevention efforts identified in the NACP III are not scaled up rapidly and implemented in the desired manner. We must remember that India has nearly 3 million people living with HIV. These are people facing stigma, discrimination and irrational prejudice everyday of their lives and need all our support and understanding.” (WHO News Release, 2007).

HIV 1-C is the most common sub-type of infection in India. As of 1997, the estimated life-years lost per case of HIV infection in India was 44.4 years, with a total economical loss of

Rs.1014 billion (U.S.\$ 22.7 billion) (Godbole & Mehendale, 2005). Although most cases of HIV infection initially occurred among commercial sex workers (Godbole & Mehendale, 2005), HIV infections are now reported frequently among married women whose only sexual contact is with their spouses (Newman et al., 2000; Hawkes & Santhya, 2002). The number of women in India who acquire HIV infection through heterosexual contact in a married relationship is increasing (Hawkes & Santhya, 2002).

The States of Andhra Pradesh, Tamil Nadu, Maharashtra, Karnataka, Goa and Manipur have a high HIV prevalence (UNAIDS, 2009; Godbole & Mehendale, 2005). Two-thirds of India's HIV cases have been reported in these six States in the south, west and north-eastern tip of India (UNAIDS, 2006). A large proportion of Indian women are infected with HIV due to sexual contact with regular partners who have been infected during paid sex (UNAIDS, 2006). In India, 39% of adult infections occur in women (Avert, 2009). Mother-to-child (MTC) transmission of HIV at rates between 36% and 48%, have resulted in a pediatric HIV epidemic in India (Godbole & Mehendale, 2005).

Thirteen percent of 916 women attending sexually transmitted infections (STIs) clinics in Pune India who were HIV positive were not commercial sex workers (Bollinger et al., 1997). More than ninety percent of the HIV positive women in this study reported having only one life-time sex partner and having sexual intercourse without condoms with their partners within the past three months (Bollinger et al., 1997). This data suggests that Indian women may be at risk for HIV infection even when they report to be in monogamous relationships. Such risk for HIV may be due to unsafe sex practices stemming from erroneous beliefs of being in monogamous relationship, and hence low self-perception of HIV risk (UNAIDS, 2006). Such perceptions and lack of awareness of HIV not only increase Indian women's risk of HIV but also exacerbate the

risk of mother-to-child transmission of HIV. Obviously, women who do not use condoms while having vaginal intercourse with HIV infected male partners are also at high risk for intended or unintended pregnancies. Although women have more biological susceptibility to HIV infection, other factors must be examined with respect to their HIV risk. The factors which increase the vulnerability and risk for HIV among Indian women must be understood with relevance to social norms and gender roles in order to curtail the HIV/AIDS epidemic in this population.

2.2 IMMIGRATION FROM INDIA TO THE USA

The Indian-American population in the United States increased from over 7 million in 1990 to almost 13 million in 2000 or an increase of 72% (Shelley et al., 2004). India accounts for the second largest number of legal immigrants in the U.S. after Mexico (Department of Homeland Security, 2007). The median household income of U.S. households with an Asian immigrant is \$51,400. This is the highest median household income among foreign-born nationals in the U.S. Asian-Americans, including Indians, have a high proportion of males and females employed in professional and managerial positions in the U.S. (U.S. Census Bureau, 2002).

Eighty thousand of the 570,000 foreign students who attend U.S. universities in 2004-2005 came from India. This makes India the country from which the largest number of foreign university students in the U.S. arrive (U.S. Department of State, 2004, 2006). A recent study of an Indian immigrant population in the U.S. revealed that members frequently travel between India and the U.S. and that they may be having sexual contacts in both the countries (Shedlin et al., 2006). Immigration causes stress which can adversely affect the health of individuals (Deren et al., 2006). Immigration also involves acculturation that can further influence the risk behaviors of immigrants (Berry, 2005; Shelly et al., 2004).

2.3 MIGRATION AND ACCULTURATION

Voluntary and involuntary migration impacts health by increasing the immigrants' vulnerability (Carballo et al., 1996). Women, in particular, are reported to experience increased vulnerability when migration occurs under stressful conditions (Carballo et al., 1996). Immigrants form social networks in the environment they immigrate to and experience the process of acculturation. Research suggests that they exchange health information within these networks, irrespective of their educational status (Shedlin et al., 2006). The nature of the information exchanged and the networks in which they are shared can affect the vulnerability and risk of immigrants for illnesses such as HIV/AIDS.

The phenomenon of internal migration must also be examined with relevance to international migration. In general, international migration is preceded by internal migration within the sending environment (Ganster & Leroy, 2008; Kusakabe & Oo, 2004). Internal migration occurs from the rural/remote regions to an international border or any other site from where immigration can be initiated. This phenomenon is relevant due to the changes in the socio-cultural and gender roles in the migrant population during the time they spend in such areas prior to migration. Such changes in norms are affected by the ties that migrants maintain with interior regions (Kusakabe & Oo, 2004, Martinez, 2004). Internal migration, in the case of female Indian immigrants, should be studied for potential influences these may have on the perceptions which can influence their risk for HIV while in India. Similarly, the contexts of internal migration from internal regions of Mexico to the Mexican side of the U.S.–Mexico border must be understood with relation to the borderlander identity shaped by the process (Martinez, 2004). The resulting norms may influence borderlander perception of HIV risk behavior. Consequently, this can influence the HIV incidence on both sides of the border.

Acculturation is the process of cultural and psychological change that takes place as a result of contact between cultural groups and their individual members (Berry, 2005). The major dimensions of acculturation are structure and culture (Shelly et al., 2004). Structure comprises social groups and institutions while culture comprises language, behavior and values (Shelly et al., 2004). Acculturation involves adaptation of both desirable and undesirable behaviors present in native population. Similarly, the benefits or risks associated with the adapted behaviors are also acquired. The effect of acculturation has been previously studied with relevance to behaviors related to breast cancer (Islam et al., 2006), parenting attitudes (Jambunathan & Counselman, 2002), hypertension (Wong et al., 2005), cardio vascular (Ivey et al., 2004) and HIV (Shedlin et al, 2006).

Although acculturation has been shown to be a component in the causal pathway of risk behaviors, it would be simplistic to consider it as the only cause of health disparities and undesirable health outcomes in immigrants. Public health research must consider the disadvantaged status that immigrants experience due to structural inequality embedded in the receiving environment. The U.S.-Mexico border region, in particular, has inequalities owing to the asymmetry in regional resources, power differentials of the nation and the state, and the “permeable” nature of the border itself (Martinez, 2004; Donnan & Wilson, 1999). The relationship of such regional and structural factors to the health risks and outcomes of immigrant and/or border populations should be examined in order to better understand risk behaviors within these populations. Cultural competency in health services should address such regional and structural factors which can prevent immigrants from utilizing these services. Immigrants face complex multiple issues such as poverty, lack of suitable employment, lack of health insurance

and, reduced access to health services in addition to language barriers and differences in health beliefs (Hirsch, 2003; Chavez, 2003).

2.4 MIGRATION AND GENDER

Gender can be defined as the widely shared expectations and norms within a society about appropriate male and female behavior, characteristics and roles. It is a social and cultural construct that defines women's and men's responsibilities and the ways in which they interact with each other (Gupta, 2002). Migration research did not focus on women until the 1970's due to stereotypical assumptions made by researchers studying migration. Investigators who studied migration by women frequently focused on their role in family structure and reproduction (Pessar, 1999). More recent studies have employed a more enlightened approach to studying the female migrants (Pessar, 1999).

Prior to the 1990s, women were mostly considered as passive reactors to male migratory decisions (Brettel & Simon, 1986; Kosoudji & Ranney, 1984; Peddraza, 1981) or as migrating solely for "family reasons" (Pessar, 1984). However, such assumptions can result in misleading conclusions about social, physical and psychological determinants of health of immigrant women.

It is important to consider gender should be considered as a factor that can cause power differentials in migration and immigration. It has been reported that a greater number of children in the household seems to reduce the odds of first migration among Mexican women but has no apparent effect on male migration decisions (Kanaiaupuni, 2000). This supports the proposed relationship between gender and (im)migration. Similarly, the reasons for migration vary with gender. Recent studies suggest that women tend to migrate for reasons ranging from economical

need, domestic violence and need for liberation while men seem to migrate mainly for labor (Richardson, 1999; Davidson, 2000; Hondagneu-Sotelo, 1999).

Engendering migration research helps in understanding how it shapes the power differentials and the companionate nature of courtship/dating structures and marriages among different immigrant groups in the U.S. Hirsch & Wardlow (2006) explicitly explain how conflicts and inequalities coexist with love, sexuality and companionship in relationships during courtship and marriage. Their rich ethnographic data demonstrates how cultural, demographic and economic factors influence the contexts and manner in how these concepts are expressed. What is considered as love can vary based on gender-based ideologies/expectations, cultural beliefs about the human body and health, and notions of modernity as observed through movies and romantic novels. In addition, attitudes about pre-marital sex and fidelity in marriage, and romantic notions about courtship and sex can also influence an individual's ideas about love (Hirsch & Wardlow, 2003).

Although the basis for the above notions vary across cultures, the resulting risky sexual behaviors have a common implication for the health outcomes of immigrants. Such risky behaviors can have particularly adverse effects for immigrant women. Perceptions about love, courtship and marriage specific to each immigrant group are relevant to HIV risk behavior because of their potential to cause women to engage in unsafe sexual practices. Gender role expectations in each group and environment can shape risk behaviors. For example, both Indian and Latino cultures regard sexual naiveté and virginity as desirable traits in women (Hirsch & Wardlow, 2006; Hawkes & Santhya, 2002). Similarly in the Igbo culture, women choose not to use condoms even when they are aware of their partner's infidelity due to denial of their personal HIV risk and, due to the notion that such acceptance reflects on their poor choice in partners

(optimistic bias) (Hirsch & Wardlow, 2003). Optimistic bias was also observed as a risk factor for HIV among Inner City African-American women in Cleveland, OH (Sobo, 1995).

The above variations in perceptions about sexuality with respect to relationships and unsafe sex practices should be examined in different immigrant groups in the U.S.-Mexico border region. These immigrant groups may face additional and unique barriers during their acculturation into the mainstream owing to the bicultural/binational environment on the border. This present study explored the reasons for migration to the U.S among female Indian immigrant students and their perceptions/norms regarding love, sex, sexuality, courtship and marriage in their sending and receiving environments.

2.5 ACCULTURATION AND HIV RISK IN INDIAN IMMIGRANTS

Immigrant populations are at risk for not only HIV/AIDS but also for other unfavorable health outcomes in general (Deren et al., 2005). The types of immigrant social networks and their relationship to diverse social settings, acquisition of new social identities and behavioral norms play a key role in designing public health interventions for immigrant communities (Shedlin et al., 2006). These factors must be considered when examining HIV/AIDS risk and prevention among immigrant populations. AAPIs including Indian-Americans are more likely to be diagnosed with advanced stages of AIDS as compared to other U.S. racial and ethnic minorities (Wong et al., 2004). In addition, AAPIs are more likely than other minorities to present with opportunistic infections when diagnosed with AIDS (Wong et al., 2004). The cause for this delay in diagnosis of HIV/AIDS among AAPIs needs to be further examined in terms of this immigrant population's subgroups, health beliefs, social networks, and gender norms. In addition, the structural barriers if any, to seeking HIV testing services and prevention education for AAPIs should be probed. The implication of grouping various AAPI subgroups together

despite their obvious diversity (i.e. economic capacity, education, social and class structures, cultural beliefs, language, immigration reasons) in increasing their risk for HIV while in the U.S. require further investigation.

Deren and colleagues (2005) have reported that HIV-related risk behaviors of immigrants are governed by multiple interrelated factors including health beliefs, traditional and evolving social norms, attitudes, and behaviors that shape sex and drug use as well as environmental factors such as social support and peer pressure. A qualitative study using a multi-method approach conducted by Shedlin et al., (2006) among three immigrant populations (Hispanic, and Indian immigrants) in New York indicated that vulnerability to HIV infection and attitudes towards susceptibility to HIV infection were strongly influenced by cultural beliefs among these immigrants. Male Indian immigrants who participated in this study reported that they were unaware of modes of HIV transmission prior to migrating to the U.S. In addition, it appeared that most HIV infected Indian men do not disclose their HIV status or risk behaviors to their potential brides in India (Shedlin et al., 2006). The authors concluded that social network support is desired by immigrants irrespective of their educational levels. It is generally acquired from peers of similar age and ethnic background (Shedlin et al., 2006). Social support also involves provision of important information on health behavior (Shedlin et al., 2006). Such health information may also include information about HIV prevention. However, information about HIV testing and consistent condom used as a strategy to reduce HIV and STI risk may not be shared within these networks owing to the same cultural beliefs that cause denial of sexual risk and, optimistic bias also must be considered.

Although women, especially those from developing countries, are disproportionately vulnerable to HIV infection compared to men (Parker, Easton, & Klein, 2000), there is a dearth

of HIV prevention interventions for AAPI women who immigrated to the U.S. Most existing interventions for AAPIs in the U.S. are aimed towards men having sex with men (MSM) (Asian Pacific Islander Wellness Center, 2006). Hence, the design and implementation of effective HIV prevention interventions for AAPI women in the U.S., among Indian women in particular, is very much needed. HIV prevention interventions should address the fact that different cultures have different beliefs, explanations and perceptions of HIV and sexuality (Lechky, 1997). For example, explicit images and language in terms of sex and sexuality are not tolerated within the Indian culture (Lechky, 1997). According to this available evidence, effective HIV prevention interventions targeting Indian immigrants in the U.S. should not show graphic images such as those often found in HIV education material available for the general U.S. public.

The lack of culturally competent HIV prevention interventions for Indian-American women is compounded by the fact that subgroups within AAPI immigrants in the U.S. are often ignored despite considerable differences in their sociocultural norms and gender roles especially with respect to STIs. In addition, the Asian-Americans are prone to hidden health disparities and risk behaviors owing to the traditional myth of belonging to a “model minority” population in America (Dasgupta, 1998). Asian-Americans in the U.S. were designated in the 1970s as a “model minority” who had desirable health outcomes and fewer health risks. This designation was originally coined in order to exclude Asian-Americans from public service programs (Dasgupta, 1998). However, this policy appears to have facilitated the hiding of high-risk behaviors and poor health outcomes among Asian-Americans.

Although it is crucial not to underestimate the role of cultural perceptions, social norms and gender roles in influencing HIV risk among female Indian-Americans, especially those

attending U.S. colleges, other factors related to region, economy and health/immigration policy should not be overlooked as these can compound this risk.

In general, college students in the U.S. are at high risk for HIV compared to other population sectors (Peltzer, Nzewi, & Mohan, 2004; Bruce & Walker, 2001). Similarly, the scientific literature indicates that college students in India, especially those from South India are at high risk for HIV due to their attitudes towards the disease and disease testing (Seth & McNair, 2004; Hausner, 2000). Immigration may add an extra dimension that shapes HIV risk for this population. In addition, the high prevalence of HIV particularly among Indian women of childbearing age who report being in monogamous relationships warrants more scrutiny into the mechanisms that may increase their HIV risk.

2.6 HIV RISK AMONG COLLEGE STUDENTS IN THE U.S. AND IN INDIA

The literature indicates that HIV risk behaviors are prevalent among college students in both the U.S. and India (Lewis et al., 2009; Gayle et al., 1990; Hausner, 2000). However, these risk behaviors may vary by environment, country of origin and gender (Seigel, Klien & Roghman, 1999; Lal et al., 2000; Seth & McNair, 2004).

One in 500 college students in the U.S. is infected with HIV according to the results of a blind study conducted at 19 universities where anonymous blood samples were tested at campus health centers (Gayle et al., 1990). College students in the U.S. are increasingly engaging in drug and sexual behaviors that place them at increased HIV risk (Lewis et al., 2009; Sikkema, Winett & Lombard, 1995; Gayle et al., 1990). College students are susceptible to high-risk behaviors due to peer pressure, lack of maturity, alcohol and drug use and other factors (Meilman, 1993). Strader & Beaman (1991) report that the majority of college students they surveyed in the U.S. were sexually active but only 40% of those who were sexually active had ever used condoms.

Lewis and colleagues (2009) confirmed the high prevalence of such unsafe sex practices among college students in current times. These behaviors in college students may be related to the fact that despite an increased awareness and knowledge about HIV risk, students do not consider such risk personal (Lewis et al., 2009; Opt et al., 2007; Fisher & Misovich, 1990).

Overall, college students have lower prevalence of HIV when compared to other high risk groups. However, the elevated prevalence of high-risk behaviors stress the need to investigate their HIV risk. These risk behaviors may also be shaped by stigma. Stigmatizing attitudes towards people with AIDS (PWA) exist among university students in the U.S. These include blaming HIV positive individuals for their infection, social avoidance of PWAs, and stigmatizing homosexuality (Henschel, 1997). Such attitudes may reduce college students' willingness to undergo testing for HIV which can further increase the transmission of HIV among college students. A previous study has shown that the American college students' low intention to use condoms may be related to their tendency to consider themselves to be in committed relationships and to trust their partners to be equally committed (Peltzer et al., 2004). Another study that examined the attitudes of 1571 college students' attitudes about AIDS and PWA over a 15 year period found that perceptions about personal susceptibility to HIV remained low among college students and had little relationship to their attitudes about HIV/AIDS and PWAs (Bruce & Walker, 2001).

Decreased condom use among students has been linked to number of sexual partners, inadequate HIV/AIDS knowledge, misinformation about condom use and inhibition to discuss condom use with partners (Lewis et al., 2009; MacDonald et al., 1990). In addition, the use of oral contraceptives and the common perception that condoms can decrease sexual pleasure act as barriers for college students to practice safe sex (MacDonald et al., 1990). Alcohol use is a risk

factor which is directly related to risky sexual behaviors among college students (Lewis et al., 2009; Fisher & Misovich, 1990; Butcher et al., 1991).

Behavioral research focusing on HIV risk reduction among college students in the U.S. indicate that nuances in transmission of HIV associated with gender norms, misperceptions about serial monogamy as a HIV prevention strategy, and inability to negotiate condom use need to be addressed explicitly by interventions targeting HIV prevention in this population (Bazargan et al., 2000). It has been suggested that further research is needed to investigate the role of student perceptions of serial monogamy in influencing their intentions to consistently using condoms to reduce their risk for HIV and other STIs (Sanderson & Jemmott, 2006). The suggestion to probe alcohol use and gender roles related to HIV risk is based on the finding that lower rates of alcohol use are related to higher frequency of condom use among college students (McNair et al., 1998). It also appears that female college students with low self esteem report an increased perception of HIV susceptibility for themselves and their sexual partners (McNair et al., 1998). The inter-group differences among college students regarding frequency of condom use, type of contraception used (condoms versus oral contraceptive), gender expectations for contraceptive use, frequency of risky behavior and, rate of HIV testing may vary significantly between college freshmen, juniors or seniors. Such potential differences need to be taken into consideration while investigating HIV risk among college students (Seigel et al., 1999).

Research studies examining the risk of HIV among African American, Mexican immigrant, American, and Taiwanese college students suggest that whether the culture is individualistic or collectivistic may play a role in influencing their HIV prevention behavior (Sampson et al., 2001). However, culture does not translate to ethnicity alone. Hence, HIV risk

related to cultural norms must be examined with relevance to group norms experiences by immigrant college students with respect to their environment.

HIV risk research among Asian-Americans including Indian-Americans and immigrant students from India was limited to initiation of sexual activity until the 1990s. Other studies that focused on sexual risk behaviors among individuals in this group have mostly ignored or failed to acknowledge the diverse sub-groups within the population (Hahm et al., 2007; Constantine et al., 2004; Salant & Lauderdale, 2002; Jemmott, 1999; Cochran et al., 1991). These studies have also grouped Asian-Americans with Pacific Islanders (AAPIs). Current health promotion and anthropological research indicates the need to examine the specific influence of group norms, gender roles, structural factors and immigration on an individual's risk for any health condition, including HIV, with relevance to inter and intra cultural variations (Shedlin et al., 2006; Handwerker, 2002; Chavez, 1998; Sobo, 1995; Nag, 1995). For this reason, ignoring the diverse sub-groups within Asian-America and/or grouping Asian-Americans with Pacific Islanders when examining their HIV risk could only serve to misinform researchers and intervention planners. It is also possible that immigrant students from these sub-groups may be modifying their vulnerability, risk or resilience to HIV based on socio-cultural and structural factors in their sending and receiving environments (Berry, 2005) in addition to ethnicity-based norms which can influence HIV risk and resilience. The myriad of factors that can potentially influence HIV risk for immigrant and other college students in the U.S. emphasizes the need to individually examine the contexts which are relevant to this risk within each student sub-group.

The evidence from literature suggests that college students in India also engage in risky HIV behaviors. India, with one of the fastest growing rates of HIV in the world, is a major sending environment for international students in the U.S. This has important implications for

HIV risk among college students in the U.S., a population already characterized by high-risk sexual behaviors. Recent studies indicate that South Asians, particularly Indians, should be regarded as a high priority group for HIV prevention efforts in the U.S. (Hahm, et al., 2007). Low knowledge and awareness of HIV, perception of HIV as a social risk rather than a personal one, and decreased condom-use (Seth & McNair, 2004; Hausner, 2000) may increase the HIV risk of Indian college students. In addition, Indian social norms promoting socio-sexual restrictiveness and conservative interpersonal sexual behavior may increase the vulnerability of this population to HIV, especially Indian women (Meston et al., 1996). In view of the evidence indicating that HIV risk is increasing among college students due to inter and intra-group norms in risk behavior, the specific factors which influence such behaviors must be studied. Particular emphasis should be placed on examinations of the role of immigration and acculturation in shaping the vulnerability, risk and resilience to HIV infection with respect to immigrant student populations.

2.7 THE CONSTRUCTS OF VULNERABILITY, RISK AND RESILIENCE

Factors which influence vulnerability, risk and resilience are common to many health behaviors and conditions and are intrinsic and extrinsic to the individual. Vulnerability is defined as a varying state of weakness or strength that can be mobilized when one encounters a threatening event (Leffers et al., 2004). To be vulnerable is defined as, “to be able to be physically or emotionally hurt”, and, “liable to damage or harm, especially from aggression or attack”, (Rogers, 1997). Vulnerability is a concept related to risk (Leffers et al., 2004). All populations at-risk for a certain health condition or behavior do not necessarily possess the same levels of vulnerability to the health condition or behavior (Leffers et al., 2004). Several factors intrinsic and extrinsic to an individual or population influence their vulnerability. Similarly, all

female Indian students may not be vulnerable at the same level for HIV infection. The individual, socio-cultural and environmental factors shaping and affecting the individual and/or group vulnerability need to be analyzed in order to gauge the vulnerability of a person or community to HIV infection. This also reflected in Handwerker's Culture Theory (2002) which addresses inter and intra-cultural variations pertaining to any behavior. This theory is discussed in detail in the theoretical framework section of this proposal.

A vulnerable individual, "is or may be unable to take care of himself or herself, or unable to protect himself or herself against significant harm or serious exploitation" (Williams, 2004). Vulnerability is high among individuals with lesser social status, social capital and human capital resources (Aday, 1994). Spiers (2000) describes vulnerability as an externally evaluated risk (etic view) and as an experiential state (emic view). The concept of vulnerability can vary depending on whether one takes an etic or emic view. Although the etic and emic views of vulnerability of individuals can overlap, Spiers (2000) states that the understanding of the etic and emic approaches forms the foundation for differentiating vulnerability as "relative risk" and as a "state of being".

If one considers vulnerability from an etic perspective, individuals are considered vulnerable based on demographic characteristics which place them at a relatively higher risk for social and health problems. Such demographic characteristics are referred to as deficits which can increase social dependence (Spiers, 2000). The emic perspective delegates four attributes to the concept of vulnerability: the unique sense of integrity of an individual, the presence of a challenge, the individual's capacity for action, and the multidimensionality of vulnerability as multiple, simultaneous or cumulative (Spiers, 2000).

Vulnerability in clinical health has also been defined as relative risk within an epidemiological framework which is, “driven by biomedical views of pathology and illness” (Lessick et al., 1992). An individual’s vulnerability may also depend on whether power differentials act as barriers to expression of vulnerability. Perceptions of such power can influence the experiences of vulnerability among individuals (Spiers, 2000).

The constructs of vulnerability and risk are intertwined since poor health outcomes result from the interaction of risk factors and facets of vulnerability. Risk is defined as a state where antecedent factors which “create a greater than average chance of poor health outcomes” (Leffers et al., 2004). Vulnerability can modify risk-responses in an at-risk individual. Risk responses are behaviors which an individual undertakes when in a state of risk (Leffers et al., 2004). Risk responses can be positive or negative. Learned and underground resourcefulness, and resilience are types of risk responses. The illustration of risk and vulnerability by Cowan and associates, (1996) as quoted by Leffers et al., (2004) provides an accurate visualization of these constructs:

“A sailboat with a crack in its hull is hurriedly patched and returned to sea. If the weather is good, the boat is fine. If a bad storm occurs, any boat in the water at the time is at *risk*, but this boat is *vulnerable* because of the cracked hull. In this example, the cracked hull amplifies the risk condition of a bad storm. However, a skilled captain and crew can be another facet of vulnerability of this boat that would make the vulnerability less than if the captain and crew were not experienced. Whatever the outcome, the result is a product of the interaction of the risk, responses to risk, and vulnerability.”

The various definitions and conceptualization of vulnerability discussed above may be informational but they also tend to ignore the positive attributes of those individuals who are

sanctioned as vulnerable which enable them to overcome their vulnerabilities and/or survive despite these (Leffers et al., 2004).

Social desirability is closely related to the vulnerability of individuals. The etic perspective on vulnerability can be explained as the way in which vulnerable individuals are less able to perform in socially desirable ways even when social sanctions are indispensable (Spiers, 2000). Thus, a woman vulnerable to HIV can increase her risk for the infection due to her inability to function in socially desirable ways. Such social desirability can in turn be defined by the social norms and gender roles of the cultures the individual belongs to, and comes into contact with. The concept of social desirability has implications for interventions designed for vulnerable populations. Interventions designed for a vulnerable group must increase an individual's choices while not restricting those of other members of the same community. In order to do so, HIV research must explore the group norms which may affect HIV risk and resilience by influencing social desirability.

Certain individuals in each community/population are sanctioned to decide or evaluate whether certain members in the community are vulnerable (Spiers, 2000). Such members include investigators, primary health care providers and community health workers. The issue which concerns social sanctions is that the persons authorized making these sanctions regarding vulnerability to health conditions may not be the ones deciding policy and structure (Spiers, 2000). The consequences of this inability of health care providers can contribute to structural violence. Structural violence refers to any constraint on human potential due to political, and economic structures (Gatlung, 1969).

Vulnerability can also be described in a psycho-socio-cultural context. Vulnerability can be viewed as the result of exposure to harm by an individual. Such a concept avoids delegating

vulnerability of an individual as an unavoidable aspect resulting from his/her gender, socio-economic status, ethnicity, health status, occupation or marital status (Spiers, 2000). Instead, the psycho-socio-cultural concept of vulnerability focuses on the vulnerability of an individual with respect to their day-to-day experiences of the individual. An example would be the quality of health care an individual receives.

Cultural meanings of behaviors dictate the vulnerability of individuals to a certain illness (Parker, 2001). For example, gender roles and sexuality structures sanctioned by a culture affects the extent to which an individual is susceptible to HIV/AIDS (Parker, 2001). Vulnerability of individuals/cultures can change as the culture itself evolves. The role of culture in influencing the vulnerability of individuals can be seen when individuals reside in their country of origin and when they migrate, no matter whether the migration is voluntary or involuntary (Carballo et al., 1996) This, in turn, can impact health of immigrants, especially women. The physical and psychosocial conditions under which individuals migrate also influence their vulnerability. The examination of gender roles and cultural norms play a vital role in ascertaining the vulnerability of migrating populations.

The etic perspective of vulnerability attempts to integrate the interactions between humans and their environment that contribute to the individual and population vulnerability (Spiers, 2000). This is different from the view that considers individuals as separate from their environment and explains vulnerability as personal characteristic, behavior and/or genetic predisposition (Spiers, 2000). Ignoring or inadequately acknowledging environmental factors that affect vulnerability deprives health care professionals and researchers of the opportunity to modify the quality of the environment and reduce the vulnerability for a particular health condition or risk behavior.

The risk environment of an individual greatly influences his/her vulnerability. A risk environment can be conceptualized using a combination of individual behavioral characteristics, egocentric network characteristics, and social status proxies (Friedman & Aral, 2001). An egocentric network is comprised of direct linkages of an individual and is usually self-reported (Friedman & Aral, 2001). Another risk-potential network which could influence vulnerability is the sociometric network. The sociometric network refers to a set of people and the all linkages among them (Friedman & Aral, 2001). Friedman & Aral (2001) suggest that sociometric risk-potential networks can spread infections within a community different from egocentric networks which are the proximate potential sources of the infections. They also indicate that network analysis can play a vital role in designing public health interventions for reducing risky behaviors.

Support in the form of social networks is reported to be desired by immigrants irrespective of their educational levels and is generally acquired from peers of similar age and ethnic background (Shedlin et al., 2006). These networks could include risk-potential networks. This possibility should be recognized while ascertaining the vulnerability of individuals to particular risk behavior and resulting health outcomes. This understanding of risk environments is particularly critical when exploring risk behavior among populations on the U.S.-Mexico border region due to the proximity to Mexico and high transborder mobility.

Environmental factors external to an individual can also affect an individual's social network (Chavez, 1998; Friedman & Aral, 2001; Richardson, 1999). These include such as urban structures, economic forces, social policies, and policing patterns such as immigration law enforcement and apprehension by border patrol officers. Hence, the role of these extrinsic factors should be acknowledged while studying vulnerability of individuals and populations especially

in the current border milieu, and while designing and implementing interventions for the same. Exploration of intrinsic and extrinsic factors, and their role in shaping risk behaviors and influencing the vulnerability of the individual necessitates methodological research and theoretical development (Friedman & Aral, 2001). For example, the vulnerability of an individual or population to HIV infection can be shaped and impacted by an array of structural factors.

The opportunities to reduce an individual's or population's risk for HIV also can be impacted by understanding the specific social contexts for the behavior which makes them vulnerable to the infection (Parker, 2001). An individual's HIV vulnerability is shaped by the cultural factors dictating what sexual practices mean to persons, the context in which these practices take place, the social scripting of these sexual encounters, and diverse sexual sub-cultures which exist within communities (Parker, 2001).

The cross-cultural diversity which is evident in the construction of sexual interactions, particularly those of the same-sex, can also affect the vulnerability levels of individuals and groups to HIV/AIDS (Parker, 2001). Cultural perceptions regarding homosexuality and what is perceived as "queer" influence decisions to immigrate and, the acculturation experiences of such individuals upon immigration to the U.S. (Lubhied & Cantu, 2005). In general, the exploitation and segregation of "queer" immigrants in the U.S. appears to vary with their documentation (Lubhied & Cantu, 2005). However, in case of immigrant students, documentation may not be the key factor dictating such social isolation. Instead, the norms in their sending environment for same-sex intimate relationships and norms regarding the same within their social networks in the receiving environment may influence segregation.

Structural barriers and facilitators for risk-reduction must also be focused upon in order to determine and reduce the vulnerability of individuals to infections and other health problems (Parker, 2001). Prior studies have shown that internal and external factors which increase the vulnerability of immigrants influences their risk for mental health problems, drug use, sexual abuse, and exploitation in general (O'Hare & Van Tran, 1998; Hulewicz ,1994).

Resilience is a type of risk response that results from a modifying process of vulnerability and produces outcomes as good as those in the absence of risk (Leffers et al., 2004). Resilience is also defined as the process of capacity for, or outcome of successful adaptation despite challenging or threatening circumstances (Masten et al., 1990). The protective factors related to resilience can be differentiated as internal and external to an individual (McCubbin, 2001).

Internal protective factors comprise self-esteem or self-efficacy, sense of responsibility, honesty, and ability to restrain oneself and decision-making abilities. External protective factors comprise family support and communication, caring school environment, presence of role models, and community involvement. Protective factors can be defined only in connection of risk factors and can moderate risk factors and protect against poor outcomes (McCubbin, 2001).

Howard and associates (1999) describe three kinds of resilience: overcoming odds or withstanding adversity, coping during sustained and acute negative circumstances, and recovery from trauma. The theoretical issues concerning resilience include the following: (i) the consideration of protective and risk factors as opposite ends of a single continuum, (ii) the multiplicity & specificity of protective factors which make one-on-one specification of relationship between both risk and protective factors difficult, (iii) the notion that resiliency in one life domain may not translate to the same in another, and, (iv) the fact that the actual

mechanism of resilience is poorly explained in literature (Zimmerman & Arunkumar, 1994). Positive deviance is a phenomenon which influences resilience.

Positive deviance is defined as the process by which individuals whose special strategies, behaviors or practices enable them to find better solutions to prevalent community problems than their neighbors who have access to the same resources (Sternin et al., 1998). The equal presence or absence of risk for the specific individual/population sector studied in comparison to other individuals/population sectors studied differentiates positive deviance from resilience. The concept was initially developed in nutrition research while studying families who had developed culturally appropriate positively deviant practices which enabled them to successfully nourish their children despite poverty and other high-risk factors (Sternin et al., 1998; Sternin 2002). Positive deviance in a community can be hard to recognize. Hence, it is often difficult to replicate all positive deviance strategies through community programs. This is usually due to the fact that positive deviance is usually “one positive layer in a stack of negative adaptations” (Sternin et al., 1998).

Positive deviance can be utilized to influence health outcomes. The steps involved in such a risk-reduction process would involve establishing the context of positive deviance, identifying the positive deviants in a community, helping them understand and improve their practice, developing mutual support between them, disseminate knowledge to all community members, and ensure maintenance.

2.8 STRUCTURAL VIOLENCE

The vulnerability and risk of individuals for a health condition can be influenced by structural violence. The constraints defined as structural violence are nestled within three systems: socio-political (macrosystem), socio-environmental (mesosystem), and psychological

(microsystem) (James, 2001). Structural violence occurs when individuals are disadvantaged by political, legal, economic or cultural traditions and is almost always invisible. The damage caused by structural violence is more common but subtle, occurs more slowly, and is more difficult to repair when compared to the damage resulting from direct violence (Winter & Leigten, 1999). Structural violence often results in direct violence. Structural violence may play a major role in determining the risk and resilience of HIV in an immigrant population that immigrates from one medically underserved region to another. As Farmer (2001) has noted, structural inequality can shape and define the foundation for any illness, especially HIV.

The literature reviewed above suggests that migration, acculturation and structural violence can affect an individual's risk behaviors and health outcomes. In addition social norms and interactions in an individual's environment can affect their vulnerability, risk and resilience to illness. Immigrant populations are exposed to such norms and interactions in two environments: sending and receiving. In addition, immigration by itself can increase a person's vulnerability. Immigration can make women more vulnerable than men, particularly when it occurs under stressful conditions (Carballo et al., 1996). The literature shows that college students are at increased risk for HIV as compared to other groups due to their propensity to engage in high-risk behaviors.

This study focuses on the HIV risk and resilience of female South Indian college students in the U.S. due to the high immigration rates from India to the U.S., particularly for education, and the high prevalence of HIV in Indian women of childbearing age, The Texas/New Mexico – Mexico region was chosen as the U.S. study site owing to the binational environment experienced by these individuals and the relative dearth of research addressing HIV risk for non-Hispanic immigrant populations in the region. However, the sending (South India) and receiving

environment (Texas/New Mexico – Mexico border region) of these immigrants are not constant (Handwerker, 2002). An accurate understanding of factors which may affect their HIV vulnerability, risk and resilience cannot be obtained without examining the relationship between these factors in both environments at the same point in time. Thus, this study was designed to concomitantly examine factors related to HIV risk and resilience for female South Indian students with respect to their sending and receiving environments. The literature pertaining to issues related to HIV in both environments was reviewed as the first step in this research process.

2.9 SENDING AND RECEIVING ENVIRONMENTS

The geography, epidemiology, cultural, psychosocial and structural factors of each environment (sending and receiving) needs to be examined and understood with relevance to the implications of these contexts for the HIV risk of the research population.

Sending Environment (India)

According to recorded historical data, civilization in India dates back to 5,000 years and is characterized by multicultural influences. These include the Aryan and Dravidian tribal influences in 1,500 B.C., Arab influence in 8th century, the influx of Turkish traders in the 12th century, and the British by the 19th century. India gained independence from the British rule in 1947 to function as a democracy (CIA, 2007). India is currently characterized by a flourishing economy, a serious ongoing political dispute with Pakistan over the city of Kashmir, and overpopulation. The current population in India is 1,129,866,154, with a birth rate of 22.1 (compared to the U.S. birth rate of 14), infant mortality rate of 54.63 (compared to the U.S. IMR of 6.4), and total fertility rate of 2.73 (compared to the U.S. total fertility rate of 2.1) (CIA, 2007). The Gross Domestic Product (GDP) per capita or the purchasing power of India is low (U.S. \$3700) as compared to the U.S. GDP (\$43,500). The Human Development Index (HDI) of

India, which is a combined measure of life expectancy, health education, GDP, and standard of living is 0.61 as of 2006 (UNDP). This HDI 126th of the 177 countries of the world with data (compared to the U.S. HDI of 0.9, which ranks the 8th in the world).

India reported 3.2 million cases of HIV as of 2007 (WHO, 2007). The first case of HIV infection in India was reported in 1986. HIV1C is the most common subtype of infection found in India (Godbole & Mehendale, 2005). About 81% of HIV infections diagnosed in India appear to have been acquired through heterosexual contact (Hawkes & Santhya, 2002). The initial occurrence of HIV in India tended to be mainly among female commercial sex workers although in recent years, most cases have been in married women (Godbole & Mehendale 2005; Gupta, 2000). This situation has also resulted in high rates of the mother-to-child transmission of HIV in India (Godbole & Mehendale, 2005).

Social norms and gender roles in India

The societal norms in India increase stigma to HIV/AIDS (Gupta, 2002), dictate values placed on pre-marital chastity and virginity, and ultimately result in Indian women rarely communicating about STIs with their spouses or families (Hawkes & Santhya, 2002). Societal norms also cause women in India to have inadequate knowledge about HIV/AIDS (Hawkes & Santhya, 2002).

Gender can be defined as the widely shared expectations and norms within a society about appropriate male and female behavior, characteristics and roles. It is a social and cultural construct that defines women's and men's responsibilities and the way in which women and men interact with each other (Gupta, 2000). Gender roles in the Indian culture silence and incapacitate women through domestic violence (Gupta 2000), social unacceptability for a "good" woman to get STIs, and emotional and financial dependence on men (Hawkes & Santhya, 2002). In

addition gender roles in India dictate different sexual morality norms for men and women (Nag, 1995). Preference for not using condoms among men in India, even in presence of STIs, has been reported (Godbole & Mehendale, 2005). Women in India discuss AIDS with their spouses, if at all, as a social issue and not in terms of personal risk (Chatterjee, 1999). The roles of each gender are clearly defined and mostly rooted in traditional Indian cultural norms. Gender expectations are passed on across generations and inculcated from birth. The sons in every family are expected to provide emotional and economic support. The daughters equate emotional, social and religious value (Cain et al., 1979; Dharmalingam, 1996). As a result, higher emphasis is placed on women adhering to social norms related to sex and sexuality. Such definitions of gender roles also translate into desirable behaviors for each gender. This, in turn, can dictate what women and men each perceive about sex, sexuality and risk behavior.

Although both male and female adolescents in India may lack knowledge about HIV transmission, adolescent girls have been reportedly more hesitant than boys to discuss issues related to sex with their parents (Selvan, Ross & Parker, 2005). Such lack of communication with parents on issues related to sex and sexuality seem to stem from the traditional norm of discussions about sex being appropriate only after marriage, and only with a spouse (Selvan, Ross & Parker, 2005). A study conducted among 1250 Indian adolescents reports that only 16% of the girls said that they discuss issues about sex even with their friends (Selvan et al., 2005).

Women in South Asian countries including India usually find themselves socially, culturally, and economically dominated by men (Fikree & Pasha, 2004). In South Asia, females are discriminated from conception as in-utero selection of male fetuses and selective abortion of female fetuses is common (Fikree & Pasha, 2004). In addition, Indian women are often

incapacitated by lack of education, early marriage, domestic violence and poor health (Fikree & Pasha, 2004).

A qualitative study among 160 women in Central India revealed that the familial, societal and cultural environments of these women played a significant role in their reproductive health decisions (Saha, 2005). Societal norms in India are based on what is regarded as right and wrong by the society. These values are passed on by the elders to younger generations. One such societal norm dictates that younger generations, especially women must accept the beliefs of elders. Cultural beliefs are responsible for stigma towards making sexual and other reproductive health decisions by Indian women (Saha, 2005). Factors such as distrust of condom use, inadequate or lack of communication about sex among men and women, and lack of perception of HIV risk increase women's risk for HIV/AIDS (Parker, Easton & Klein, 2000). In addition, there is a lack of HIV prevention interventions that increase women's control in decision making about exposure to HIV. This can compound the HIV risk of women from developing countries like India (Parker, Easton & Klein, 2000).

The results of a retrospective study conducted of 136 HIV infected women in South India, most of whom were housewives indicated that 89% identified heterosexual contact as their only HIV risk factor and 88% of the participants reported being in a monogamous relationship (Mayer et al., 2000). Another study which examined the risk factors of HIV and STIs among 391 Indian women who did not work in the sex industry attending a STI clinic in India reported 13.6% HIV prevalence among participants (Gangakhedkar et al., 1997).

A recent survey of men who have sex with men (MSM) in South India reported that almost 60% of the 6661 interviewees said that they had not used a condom in their most recent sexual encounter with men. It is noteworthy to report that 41% of the participants were married

to women and/or had biological children. The study findings suggest that Indian women could have a low perception of self-risk for HIV/AIDS if they consider themselves in a monogamous relationship. Gender norms and roles play a crucial role in access to and utilization of health care information and services, including the prevention of HIV and care for the family as a whole (Shedlin et al., 2006). Similarly, social norms and gender roles can further act as barriers for HIV and STI prevention in Indian women by propagating stigma for the same. These socio-cultural barriers to HIV/STI prevention among women also act as barriers to curtailing the pediatric HIV epidemic in India.

Stigma towards HIV/AIDS in India

Ambati and associates (1997) report that 90% of the educated individuals they surveyed in India (N=433) harbored at least one hostile view towards people with AIDS. Human immunodeficiency virus-associated stigma in India is also a barrier to promoting condom use as a HIV prevention strategy (Roth et al., 2001). The lack of privacy in stores that sell condoms adds to the social stigma surrounding condom use in India (Roth Krishnan, & Bunch, 2001). Indian women rarely communicate about any symptoms of STIs with their spouses or family. Many women perceive that it is not socially acceptable for them to get these symptoms in the first place and, if they report them, they may be blamed for the infection (Hawkes & Santhya, 2002).

The high value placed on virginity acts as a barrier to unmarried women seeking care for their symptoms resulting from STIs (Gupta, 2000). Stigmatization of women prevents many women who need the services of STI clinic and centers from utilizing them (Gupta, 2000). Indian women are also indirectly affected by homophobia. Homophobia fuels stigma towards persons with HIV/AIDS. Men who have sex with men often do not utilize HIV/AIDS prevention

and care services due fear of being discriminated against socially and legally (Gupta, 2000; Nag, 1995). This group also tends to keep their sexual practices secretive while remaining married to women (Gupta, 2000). To summarize, stigma towards HIV/AIDS acts as a health education barrier, fosters public ignorance related to HIV transmission, prevents utilization of HIV care services, and, continues to place Indian women at high risk for HIV/AIDS.

Social networks in India

The family system in India is based on monogamous marital sex and great value is allocated to premarital chastity and virginity, especially in women (Hawkes & Santhya, 2002). Although pre-marital sex appears to be prevalent in India, differences exist between the pre-marital sexual relationships of Indian men and women. The only difference is that men in India report premarital sex with commercial sex workers, friends, relatives, and future spouses, while women report premarital sex with future spouses, friends, and relatives. Indian men who have sex with other men are often married due to the social taboo of discussing or accepting sexual relationship between members of the same sex (Hawkes & Santhya, 2002). Another reason for non-disclosure among Indian MSM is the potential harassment due to the legislation passed during the British rule in 1861 (Nag, 1995). This law classifies sodomy as illegal (Nag, 1995). Amendment to this law is currently under review by the Indian government.

Previously, the first premarital sexual partner of a young Indian male was often a married woman who was either a relative, neighbor, or a commercial sex worker (Nag., 1995). Nag (1999) attributes this occurrence to the high value placed on the pre-marital chastity of women in the Indian society. However, recent studies report that pre-marital heterosexual contact between peers, e.g., college students, is common (Hausner, 2000). Only 57% of 350 women surveyed in India reported discussing HIV/AIDS within their social networks (Chatterjee, 1999). The norms

of sexual morality are different for men and women in India. Marital infidelity and pre-marital sex is often overlooked in men (Nag, 1995). These norms dictate that an Indian Hindu woman is expected to be loyal to her spouse under any circumstance. Research indicates that HIV positive Indian women are more likely to report domestic violence, forced sexual intercourse, depression and husband's extra marital sexual activity. This evidence is not surprising given the above socio-cultural and gender norms which inhibit women from attaining accurate information about HIV and, initiating HIV preventative behavior change (Nag, 1995).

If the above factors by themselves do not compound the HIV risk for Indian women, the fact that partner notification of HIV serostatus is not strictly enforced in India can definitely do so. None of the symptomatic women who participated in a study in South India were advised to notify their partners about their positive serostatus (Hawkes & Santhya, 2002). In addition, knowledge about HIV transmission is not adequate even among individuals with college level education. For example, Ambati et al., (1999) report that 63% of the 433 college-educated individuals surveyed did not know that HIV could be transmitted through breast milk. The same study also reported that 71% of the participants believed that HIV can be acquired while donating blood (due to the process itself).

HIV knowledge among women in India

HIV/AIDS is rarely discussed by women in India (Chatterjee, 1999). The power differential between the genders resulting from cultural values and practices makes it difficult for Indian women to be adequately informed about HIV risk behavior (Gupta, 2000). Women in India are culturally silenced. They are vulnerable due to the high value placed on their pre-marital chastity and virginity. Indian society which expects a "good" woman to be ignorant of

sex and be a passive sexual partner is not conducive for women to negotiate safe sex practices (Tizaina et al., 2008; Nag, 1995).

Domestic violence is yet another factor that incapacitates women from being knowledgeable about HIV/AIDS (Gupta, 2000). Preference for not using condoms is reported by many men in India. It is common for men to have unprotected sex with their spouses even in when they have STIs (Godbole & Mehendale, 2005). It is reasonable to assume that a woman faced with the immediate threat of domestic (physical/sexual) violence due to refusal of participation in sexual intercourse without a condom would not have the power to negotiate safe sex even when equipped with HIV risk reduction information. Financial and emotional dependence on men, social norms dictating tolerance as a virtue, and gender roles act as barriers for HIV prevention among Indian women. Previous studies indicate that the lack of HIV/AIDS information and/or misinformation about HIV risk among Indian women greatly increases the risk for mother-to-child (MTC) transmission of HIV (Hawkes & Santhya, 2002; Godbole & Mehendale, 2005). However, in the face of these above socio-cultural barriers to HIV risk reduction among Indian women, providing such information alone may not be effective in reducing HIV incidence in the population. These cultural issues and structural contexts such as economical status, social class, caste system in India, and literacy (functional and health) require examination regarding HIV risk in this population.

The potential consequences resulting from these barriers may be further influenced by the context of immigration. In particular, immigration from a region of high HIV prevalence to another with diverse structure and cultural issues coupled with acculturation may pose unique challenges to reducing HIV risk for these women. Hence the same environmental contexts

relevant in the sending environment should be examined along with the concept of acculturation in the receiving environment of immigrants.

Receiving Environment (El Paso, TX, USA /U.S.-Mexico Border Region)

The U.S.-Mexico border region extends 62 miles on either side of the 2000 mile U.S.-Mexico border and is home to about 12 million individuals (CHC Border Health Policy Forum, 2006). The unemployment rate in the border region is about 250 to 300% higher than rest of the country. About 350,000 persons reside in *colonias*, which are unincorporated neighborhoods (CHC Border Health Policy Forum, 2006). Economic and education inequalities, and health disparities are concentrated on the U.S.-Mexico border region. Historic and current political/policy environment have direct implications for addressing these disparities and other health issues in the border region (CHC Border Health Policy Forum, 2006). The border counties of San Diego, CA, Pima, AZ and El Paso, Hidalgo, and Cameron Counties in Texas account for 11% of the total border population. The border counties have experienced a growth rate of nearly 30% since 1990. High fertility and international migration are the two major reasons driving this population growth in the border region. If the border counties were together considered as a State, it would rank 13th largest in the Union.

Almost 5% of foreign-born individuals in the U.S. reside in the border counties. Approximately 72% of the total foreign-born population in border counties have a Mexican birthplace. About 132,000 persons, 250,000 vehicles, 523,000 passenger vehicles, 120,000 commercial trucks, and 2,000 rail containers cross from Mexico into the United States every day through 7 international ports of entry (CHC Border Health Policy Forum, 2006). The crossings at these seven ports of entry handle 90 percent of all southwest border trade and northbound

commercial truck traffic. The dynamic and transient nature of the border population has unique implications in curbing the HIV/AIDS epidemic.

As of 2007, El Paso County had a total population of 713,126 with 1,568 people living with HIV/AIDS (PLWHA) and 1,576 cumulative AIDS cases (Texas Department of Health, 2009). Latinas are at high risk for HIV (Organista, 1998). The unwillingness to promote condom use (Hirsh, 2003), HIV stigma (Parra, 2001), stressful conditions experienced by Mexican immigrants (Bronfman, 1998), and lower adherence to HIV prevention strategies overall (Organista, 1998) contribute to the high HIV risk among the border population.

The proximity of U.S. border counties to Mexico necessitates understanding the impact of Mexican socio-cultural norms, gender roles, health beliefs and prevalent sexual practices and beliefs. *Machismo* and *marianismo* are two concepts associated with gender roles in the Mexican/Latino culture. *Machismo* is the picturization of the ideal male role in Latin society in terms of virility and sexual prowess, independence, physical strength, courage, aggression and domination, and invulnerability (Ortiz-Torres et al., 2000). *Marianismo* is the characterization of the ideal woman in Latino societies as modeled after the Virgin Mary, with chastity, virginity, subordination, moral superiority, obedience, and spirituality as key virtues (Ortiz-Torres et al., 2000).

Hirsch (2003) has reported that although both younger and older migrant Mexican women in the U.S. acknowledge that migrant Mexican men's sexual behavior may put them at risk for HIV and other STIs, they are unwilling to avoid this risk by promoting condom use. Instead, they depended upon an unspoken ideal of monogamy and mutual decision-making as prevention strategies (Hirsh, 2003). Latino women have an eight fold increased risk for contracting HIV as compared to non-Latino white women. This is primarily due to engaging in

unprotected sex with high-risk partners (Organista, 1998). Latinas also report more reluctance to enforce condom use with their partners. These facts have high significance due to the increasing number of female Mexican migrant workers who enter the U.S. every year (Organista, 1998).

Male Mexican migrants in the U.S. tend to experience stressful living environments, frequently use alcohol and drugs, and have multiple high-risk sexual partners (Bronfman 1998). Culture, acculturative stress, and increased HIV risk behavior prevalent among Mexican immigrants on the border may interact with the acculturation process of female Indian university students immigrating to the U.S.-Mexico border region. The role of the social and gender norms in Mexican and Indian cultures, and, their co-existence with migrant communities on the border may uniquely influence the perceived HIV risk and knowledge of female Indian university students in the region. Thus, it is important to examine the nature of interactions between Indian students and Mexican-origin students in the border region in relation to other contextual factors of student life in this region.

Border milieu and Borderlander identities

The U.S.-Mexico border is more than an arbitrary line drawn between two nations. The mention of the U.S.-Mexico border region frequently elicits images about myths or negative stereotypical images such as drug trafficking, gender related violence, exploitation in *maquilas*, undocumented immigration, pollution, and *colonias* (Ganster & Lorey, 2008; Heyman & Campbell, 2004). While some of these issues account for unique challenges to the well being of the border population (Ganster & Lorey, 2008), they are not exclusive attributes of the U.S.-Mexico border region. The attention these topics receive by the media and investigators tends to equate these as descriptions of this unique region. In reality, there is a symbiotic delicate relationship between two economies which is grounded in national and international history.

Since the 1700s, the U.S.-Mexico borderlands have experienced varying degrees of connection, separation, conflict and cooperation with respect to its natural resources (e.g. mineral ores, water) or political decisions (e.g. Bracero Program (1940), Treaty of Hidalgo, and Gadsden Purchase) and, social uprising (e.g. Mexican Revolution).

Economic opportunities have shaped the border milieu throughout history. During 1700-1848, transborder trade and migration established a number of twin cities. These include San Diego, California-Tijuana, Baja California; El Paso, Texas-Ciudad Juarez, Chihuahua; Nogales, Sonora-Nogales, Arizona; and Laredo, Texas-Nuevo Laredo, Tamaulipas along the U.S.-Mexico border. These locations have since then evolved as complex areas of connections, interdependence and conflicts. Martinez (1994) describes the interaction in the U.S.-Mexico borderlands as one of asymmetrical interdependence. This type of interaction usually prevails when an international border experiences significant differences in economical power between its both sides. The current debate on border immigration policy involves the discussion of whether this border can be and should be integrated or not. Ganster & Lorey (2008) describe the U.S.-Mexico borderlands as both a salad bowl and a melting pot in terms of the ethnic groups present in the region. Martinez (2004) defines borderlander identities as national or transnational with newcomers, uniculturalists, nationalists, biculturalists, commuters and binationalists categorized as subgroups within these two categories. Binational consumerism can occur within any category. Similarly, Chavez (1998) attempts to classify border migrant and immigrant households in terms of binational families, domestic groups and/or layers of social networks such as “*parientes* (relatives), *camaradas* (comrades), *paisanos* (fellow country folk), *amigos de confianza* (trusted friends) and *vecinos* (neighbors).” Such classifications of Mexican-Americans and Mexican borderlanders are important to understand even though they address only one or

two majority groups in the borderlands. These classifications may have implications for possible similar network/identity differentiation among other immigrant groups in the borderlands.

The U.S.-Mexico borderlands are also characterized by issues such as human and drug trafficking, environmental pollution caused by the *maquiladora* industry, illegal or undocumented border crossings, exploitation of undocumented migrant laborers, social domination, a high prevalence of tuberculosis and other infectious diseases, poor health insurance, health care professional shortages and, a cross-border utilization of health services (Ganster & Lorey, 2008; Chavez, 2003; Angulo & Guendelman, 2002; Richardson, 1999; U.S.-Mexico Border 2012). These issues, in turn, influence the types and levels of accommodation and assimilation of border culture among borderlanders. Richardson (1999) differentiates these as cultural and structural pluralism and, cultural and structural assimilation which both potentially influence and are influenced by borderlander identities perceptions of social class and cultural/racial biases. The potential role of such structural and cultural issues in the U.S.-Mexico borderlands in relation to the HIV risk of Hispanic and non-Hispanic immigrant populations must be examined in order to address HIV/AIDS in this region.

Stigma towards HIV in the U.S.

Stigma towards people with AIDS is widely prevalent in the U.S. The general public appears to harbor negative feelings towards PWAs and some community members support coercive measures like quarantining PWA (Herek & Capitano, 1997). People with HIV/AIDS are also stigmatized by health care professionals in the U.S. They tend to receive inadequate care from health care providers in the U.S. when compared to persons with other illnesses (Herek & Capitano, 1993). Herek and colleagues (2002) report that inaccurate beliefs about HIV/AIDS risk caused by social contact have increased in the U.S. The belief that PWA deserve their illness

is also a prevalent belief in the U.S. One-third of the participants in a study (N=669) that assessed the prevalence of AIDS stigma and misinformation about HIV transmission reported negative feelings towards PWA (Herek, Capitanio & Widaman, 2002).

Novick (2004) conceptualized the effects of stigma associated with HIV/AIDS in three layers. The first layer involves 95% of the PLWHA in the U.S. who belong to groups such as sex workers, racial minorities and MSM which have already been discriminated/isolated by the society. The second layer conceptualizes stigmatization as leading to more HIV risk behaviors. For example, social ostracization of MSM prevents them from indulging in open monogamous relationships. Novick (2004) concedes that such stigmatization has actually led to a culture which promotes HIV transmission. The third “layer”/effect is that this type of stigma acts as a barrier to implementing effective HIV/AIDS prevention programs which address these special populations affected by HIV/AIDS in the U.S.

Stigma associated with being HIV positive and/or MSM is common among Mexican communities. When Mexican migrants who are MSM travel back to Mexico from the U.S., they usually do not disclose their sexual orientation/preferences to their receiving community. Such non-disclosure, in turn, leads to unprotected sexual practices with their female counterparts. This high-risk behavior can promote the spread of HIV among women and the vertical transmission of HIV (Solario et al, 2004).

Stigma was also found to act as a barrier for pre-natal HIV testing in a study conducted in a predominantly Mexican-American population in South Texas. Women fear of being labeled as promiscuous or an injection drug user (IDU) if they take the prenatal HIV test (Parra, 2001). This type of HIV/AIDS stigma in the U.S. and Mexican culture could interact with the same in India. Thus, it could ostensibly affect the access of female Indian university students to knowledge

about HIV/AIDS both in India and in the Texas-New Mexico region. Similarly, the potential risk of HIV for Indian women through heterosexual contact with MSM can be present in both their sending and receiving environments. However, other environmental characteristics such as access to HIV prevention materials, local networks and norms, and stressful living conditions due to immigration can also affect the level of this risk.

2.10 HIV TEST UTILIZATION BY AAPIs IN THE U.S.

A higher proportion of AAPIs report “illness” as the reason for getting tested for HIV as compared to U.S. Whites (Wong et al., 2004). In addition, AAPIs appear to have lower awareness of their CD4 cell count and availability of HIV care related services as compared to U.S. Whites. This may be one reason why AAPIs are more likely to be diagnosed at the advanced stage of HIV/AIDS. This hesitancy in getting tested for HIV may be compounded in Indian immigrants since few HIV testing centers in India offer anonymous testing services (Solomon et al., 2004). Indian immigrants accustomed to the HIV/AIDS stigma and the scarcity of anonymous testing services in their home country may also assume the same for services in the U.S.

2.11 EXISTING HIV PREVENTION INTERVENTIONS FOR AAPIs

Most research studies which examine HIV preventions among AAPIs do not focus on the effects of HIV prevention interventions in reducing health disparities (Esperat et al., 2004). Existing HIV/AIDS prevention interventions marginalize AAPIs including Indians, due to lack of cultural sensitivity and specificity (Asian and Pacific Islander American Health Forum, 2003). As a result, current HIV prevention interventions hinder the identification of members of this population who are at high risk for HIV (Asian and Pacific Islander American Health Forum, 2003).

The high socio-economic and educational achievements of AAPIs in the U.S. tend to mask the health disparities existing within this group (Esperat et al., 2004). Furthermore, the existence of subgroups among AAPIs is also minimized (Esperat et al., 2004). The “model-minority” myth regarding Asian-Americans plus the socio-cultural norms which prevent negotiating safe sex practices and seeking HIV testing services may cause HIV prevention services to be underutilized by this population. Stereotyping of members of a cultural group is something to be avoided. The inter- and intra-cultural variations within a particular group may significantly affect the group’s risk and resilience for HIV (Handwerker, 2002). South Asians are distinctly different from other Asian groups and can be further classified according to intra-group norms. Hence, this research study focuses on Female college students from South Indian States in order to reduce the intra-group variation as much as feasible while keeping in mind the limited resources available for this research.

2.12 HIV AND SOCIAL INEQUALITY IN SOUTH INDIAN WOMEN

Worldwide, women are at high risk for HIV owing to social inequalities and power imbalances. Research studies frequently describe these inequalities as gender-based (Krieger & Zeiler, 1997, Newmann et al., 2000; Pulerwitz et al., 2003). The “model minority” myth appears to place Asian women in the U.S. at higher risk for HIV (Dasgupta, 1998). South Asian women in the U.S. also face inequalities due to domestic and intimate partner violence (Dasgupta, 1998; Kurien, 2001; Raj & Silverman, 2003). Norms pertaining to gender, marriage and sexuality in these women’s sending environment (India) interact with their vulnerability of being an immigrant in the U.S. These interactions cause many South Asian women to face marital violence while living in the U.S. (Kurien, 2001; Raj & Silverman, 2003). Such marital/intimate partner violence faced by South Asian women living in the U.S. constitutes a hidden epidemic

(Raj & Silverman, 2003). Raj & Silverman (2003) identified a high prevalence of intimate partner violence (40.8%) and low awareness of intimate partner violence services (50.6%) in a predominantly Indian sample of women residing in the Boston area (Raj & Silvermann, 2003). The authors pointed out that 28% of the women in their study did not have family in the United States making them more susceptible to social isolation. The definitions of intimate partner violence in their sending environment (India) may prevent these women from perceiving that they are being abused and allowing to take action for the same even if they have family members residing in the U.S.

Studies among women in India show that a large number of HIV infections occur in ostensibly monogamous married women owing to social norms and barriers which create power differentials between them and other members of their social networks (Solomon et al., 2003). Norms which place a high value on pre-marital virginity, intense social pressure to bear children, the social values placed on marriage, scarce economic resources, and low utilization of HIV prevention services place Indian women at high risk for HIV (Solomon et al., 2003). For example, it has been reported that the value placed on virginity before marriage can cause women to engage in alternative risky sex behaviors such as unprotected anal intercourse (Weiss, Whelan & Raogupta, 2000). Similarly, societal norms for intimate partner violence and expectations of what an ideal Indian woman is affect a woman's ability to negotiate condom use. Each of the above mentioned factors mentioned might affect an Indian woman in multiple ways and on multiple levels whether she is in India or elsewhere. In addition, legal issues may affect the HIV risk of the research population.

2.13 LEGAL ISSUES PERTAINING TO HIV

Prior to 2008, HIV positive individuals from other countries were banned from entering the U.S. This ban also prevented international AIDS conferences from being held in the country. In 2008, the Bush Administration modified the ban to allow HIV-positive foreign nationals into the country at the discretion of the immigration officers/counselors. The general ban was finally lifted on January 4, 2010. The Department of Health and Human Services acted to exclude HIV as “a communicable disease of public health significance (Immigration Equality, 2010).

The British rule in India enacted a ban on homosexuality for reasoning that sexual relations between individuals of the same sex is an “unnatural offense” (Telegraph, 2009). The year 2009 noted a historical landmark in laws relevant to homosexuality in India. On July 2, 2009 the Delhi High Court in India amended the Indian Penal Code (IPC) Section 377 to decriminalize homosexuality (One India, 2009). The Chief Justices of the Delhi High Court stated “We declare Section 377 of IPC in so far as it criminalizes consensual sexual acts of adults in private is violative of Articles 14, 21 and 15 of the Constitution”.

The 1860 original ban read, “Whoever voluntarily has carnal intercourse against the order of nature with any man, woman or animal, shall be punished with imprisonment for 10 years or life and shall also be liable to fine.” (Bose, 2009). The judges who lifted this ban are further quoted by media as, “In our view Indian Constitutional Law does not permit the statutory criminal law to be held captive by the popular misconception of who the Lesbian Gay Bisexual Transgender (LGBTs) are. It cannot be forgotten that discrimination is antithesis of equality and that it is the recognition of equality which will foster dignity of every individual” (Telegraph, 2009). An Indian gay rights activist was quoted by media declaring “this is a victory for human rights not just homosexuals” (Telegraph, 2009). Another gay rights activist in India was quoted

“The social stigma will remain. It is [still] a long struggle. But the ruling will help in HIV prevention. Gay men can now visit doctors and talk about their problems. It will help in preventing harassment at police stations” (BBC, 2009).

The lift of this ban does not necessarily mean that homosexual individuals will be accepted by the Indian society nor will cease to be harassed. However, it is seen as a positive change towards reducing this social inequality which violates gay rights, human rights and puts heterosexual women at risk for HIV in India.

2.14 THEORETICAL FRAMEWORK AND RATIONALE

Investigating minority populations often involves using a theoretical framework derived from multiple theories with multiple levels (Deren et al., 2005). The multiple individual and environmental contexts which may affect individuals and immigrant groups as a whole frequently necessitate the utilization of more than one theory. The following theories/models were examined and aided in contributing to the theoretical framework guiding the present research.

Theoretical Framework Utilized:

HEALTH BELIEF MODEL: The Health Belief Model (HBM) was originally developed in the 1950s to explain patterns of participation in disease prevention and screening programs. This model was subsequently used to explain behavior in terms of response to health conditions and treatment (Rosenstock, 1960). The HBM is based on value expectancy concepts and theorizes that a person can prevent or reduce the risk of a disease or an adverse health condition based on his or her desire to avoid the particular condition and the knowledge about a specific beneficial/preventive behavior (Glanz, 1990). Hochbaum and his colleagues report that an individual’s perception about the

possibility or susceptibility for a health condition influences the individual's decision to test for the particular condition. Similarly, the individual's perception about the possibility that he or she may actually have the health condition in the absence of symptoms can influence the individual's decision regarding the same (Glanz et al., 1990).

The five components of HBM are perceived susceptibility, perceived severity, perceived benefits, perceived barriers and, self-efficacy. Perceived susceptibility refers to "one's subjective perception of the risk of contracting of contracting a health condition" (Glanz et al., 1990, pp. 43). Perceived severity denotes an individual's belief about the seriousness of a particular health condition or the consequences of seeking care for the same. The benefits of seeking care or undertaking preventive actions for a health condition as perceived by an individual is described as the perceived benefit component of the HBM. An individual may conceptualize certain barriers to implementing preventive behavior, reducing risk behavior, and/or seeking treatment for a health condition. Such perceived barriers contribute to another component of the HBM. The component of self-efficacy was introduced in 1977 by Bandura who defined it as, "the conviction that one can successfully execute the behavior required to produce the outcomes". This component posits that in order for an individual to reduce risk behavior and implement beneficial action plans, he or she must believe that they are capable of the action.

The HBM is sometimes criticized for emphasizing the factors related to an individual's perceptions in terms of health conditions rather than including factors extrinsic to the individual. Other criticisms of the HBM include its lack of quantification or numerical coefficients for its components and the fact that an individual's behavior

may not always mirror his or her beliefs (Glanz, 1999). In addition, modifying beliefs alone may not be the solution to a health problem, particularly given the issue of structural violence (Glanz, 1999).

Prior studies which utilized the HBM in to probe HIV risk behaviors suggest that factors intrinsic to an individual can influence HIV risk behavior (Rosenstock, 1994). For example, seronegative homosexual men who perceive themselves to be at risk for HIV had fewer sexual partners (Rosenstock et al., 1994). However, the susceptibility measures used in probing such behaviors in many HIV studies that employ the HBM are not clearly defined as conditional on the action or inaction probed by these measures. Failure to make these measures conditional may cause individuals to perceive that they are at risk because they are not implementing risk-reduction strategies. These individuals may not examine if they are at risk owing to their current lifestyle norms (Rosenstock et al., 1994). Making this distinction is essential to increase the validity of research findings.

The constructs of the HBM are also seen to influence HIV risk behaviors among women including female college students (Geilen et al., 1994; Mahoney et al., 1995). Geilen and associates (1994) report that women tend to adopt multiple sexual protective behaviors if they have high perceived HIV susceptibility. Mahoney and colleagues (1995) have noted that consistent condom use among college students was most closely connected to the self-efficacy measure based on the HBM.

The HBM was considered as a relevant theoretical model for the framework guiding the present study mainly due to its individual intrinsic factors. These factors were examined with respect to HIV risk of the study population. However, this model could not independently serve as the base for this research study since it does not explain the

environmental interactions/extrinsic factors and contexts which can influence an individual's perception of risk and self efficacy to positively deal with the same.

SOCIAL LEARNING THEORY: The Social Learning Theory (SLT) explains factors which affect human behavioral patterns and also provides guidance in design of interventions and their implementation and evaluation. The SLT considers the social and physical environment of an individual in relation to behavior (Bandura, 1997; Glanz et al., 1990). The SLT was originally developed by Miller & David (1941) to explain imitation of behavior among humans and animals. These principles were then applied in clinical psychology in order to understand the cognitive aspect of human behavior. The constructs of the SLT are environment, situation, behavioral capability, expectations, expectancies, self-control, observational learning, reinforcements, self-efficacy, emotional coping responses, and, reciprocal determinism.

Reciprocal determinism assumes that behavior is dynamic and is the result of the interaction between an individual and the environment and behavior itself, which in turn can influence behavioral patterns. The change in one of these three components has implications for the other two. In this way, the interactions between behavior, the individual, and the environment constantly evolves (Glanz, 1990). Environment refers to the social and physical environment of an individual. Family and social networks constitute the social environment while the structure of the environment such as living conditions and climate constitute the physical environment.

The situation of the individual depends on the mental conceptualization or representation of an individual's environment, social and physical. The construct of

behavioral capability states that an individual has to be aware of a particular risk reduction strategy/behavior and have the knowledge to perform this strategy or behavior in order to actually implement it. Expectations are gained by observing the experience of others implementing the planned or anticipated behavior. These expectations about a situation or health condition may develop in individuals even before they actually experience them and can be developed from observing or hearing about the experience of other individuals.

Expectancies are equivalent to the benefits perceived or value placed on an outcome of a particular behavior. Ideally, positive expectancies can have the potential to reduce risk behavior such as promoting safe sex practices. The construct of self-control refers to the requirement of having to focus on a specific type of behavior and setting the goal to achieve the same. Appropriate goal setting has implications for promoting behavior change. Observational learning refers to the learning process through which an individual increases his/her potential to utilize the capability to implement behavior change through observing other individuals. Observational learning also takes into account the reinforcements received from others who implement the behavior. Reinforcements can be positive or negative and internal or external for any given behavior. The construct of self-efficacy is defined based on the same principles in the HBM (Glanz, 1990).

The SLT was considered as one of the main theories guiding the present study due to its emphasis on reciprocal determinism in addition to the intrinsic factors that determine behavior. In this study, the environmental component of the reciprocal determinism construct has a dual dimension owing to the sending and receiving

environments of the participants (female college students from South India living in the U.S.). These environments, in turn, magnify the type and number of factors that can interact with the study participant in terms of HIV risk. The U.S.- Mexico border environment also was examined as part of the research domains probed in the study in order to explore the ways in which it may influence the HIV risk of the target population.

CULTURE THEORY: Culture Theory also guided this study. Handwerker (2002) states “only individuals learn, and individuals embody and constitute the only source of cultural data.” The culture theory (Handwerker, 2002) explains culture as a learned experience. Culture, according to Handwerker (2002) is formed by recurrent behavioral patterns which constitute sensory input. This input establishes behavioral patterns that cannot be ignored and can also be considered profitable if performed. Such recurrent behavioral patterns may cause culture (individuals) and cultures (“superorganic properties of growth”) to evolve. Handwerker (2002) also argues that if culture is differentiated from cultures, the observation that individuals vary, make choices and exert control over the lives can be understood. These individuals may also be constrained by recurrent patterns of behavior.

Handwerker (2008, work in progress; personal communication, 2007) emphasizes that culture is “a coherent set of patterned and coordinated activities” based on a set of norms shared by a group which, in turn, is justified by a “shared set of assumptions about the world of experience.” Handwerker’s theory of culture focuses on behavioral patterns that shape the response of the human mind to produce behavior based on the capacity to differentiate between the positive and negative consequences of their actions

(Handwerker, personal communication 2007; Handwerker, 2002). This conceptualization of culture also recommends viewing cultures as having shared similarities and dissimilarities.

According to Handwerker (2002), such a conceptualization explains the notion that culture can be viewed as interacting and dynamic dimensions of cognition, emotion and behavior at the level of a single group/set. On the other hand, the constantly evolving dynamic interface of these dimensions when two different groups of people come into contact constitutes “cultures”. Handwerker (2002) stresses upon the importance of examining inter- *and* intra-cultural variability to determine the boundaries between existing groups in a society and better understanding behavior. Gaining such insight about factors affecting the HIV risk of the study population in their receiving environment, particularly with respect to their acculturation, can contribute to understanding their risk and resilience for HIV in the U.S.

Each individual in a group has unique experiences resulting from a set of behaviors and these shape and establish a formulation described by Handwerker (2002) as a combination of labels, definitions and associations enabling the individual to respond. Factors which can affect this sensory input include place of birth, timeframe in history when an individual is born and raised, environment in which a person is raised and experiences in the environment at different points in the person’s life. The variations in these experiences are reflected in the norms of a culture. Since these single group norms evolve depending on the experiences of the group, it is reasonable to expect that “cultures” will also evolve. Handwerker (2002) proposes that two different cultures can

have different individual experiences and characteristics but can reach consensus about experiences resulting in different phenomena such as violence, social support and stress.

Handwerker's (2002) findings suggest that lived experiences and environment dictate behavior. This behavior evolves and causes cultures as a whole to evolve. However, the phenomena involved in this change can be perceived on equal levels by both/all groups of individuals involved. This concept relates to this research with reference to the receiving environment of the target population, and to the various groups of people in both their sending and receiving environments. The influence of social support and acculturation on the HIV risk of the research population may vary depending on the individual and group characteristics embedded within this population. Similarly the expression of vulnerability, risk and resilience to HIV may vary between individuals and groups in the population based on the place of origin, time spent in each environment, travel between sending and receiving environments and, structure and norms in each environment.

THEORY OF SOCIAL PROXIMITY OF HIV AND AIDS: The theory of social proximity of HIV and AIDS (Macintyre & Kendall, (2005) attempts to posit a social and cultural explanation that can enable or inhibit behavior change. This is referred to as social proximity. This theory was examined in relation to the present study owing to the high incidence and prevalence of HIV in India and the existing structural inequalities in India and the U.S.-Mexico border region which can promote the risk for infection (Solomon et al., 2003). Macintyre & Kendall (2005) postulate that high proximity to the HIV/AIDS epidemic threatens the survival of individuals and their communities and dictates how

agendas, policies and programs are developed to combat the epidemic. This theory suggests that HIV is not considered an existing public health or community problem in societies that are in active denial about the HIV/AIDS epidemic.

The social proximity theory validates the relationship between proximity and social change using the spatial proximity construct used by geographers: “Everything is related to everything else, but near things are more related than distant things” (Tobler, 1970 quoted in Macintyre & Kendall, 2005). Social proximity is defined as operating in individual, intra-household, inter-household, family, kin and communal domains. The personal experience of knowing a person who has died of AIDS can influence behaviors so that increased levels of such personal exposure may overcome denial. Macintyre & Kendall (2005) propose that reduction of denial is likely to be directly proportional to the level of perceived HIV susceptibility. The influence of such an experience on their perceptions pertaining to self and community risk was probed during the interviews conducted for the present studies due to the high incidence and prevalence of HIV that this study population was exposed to in their sending environment. The possibility that the study participants may have personally known an individual affected by HIV was considered.

Macintyre and Kendall (2005) explain that the perceptions of risk for HIV may be related to varied interactions at the family and community levels. The factors affecting perception of risk at the family level can include interaction among family members, impact of death on economy, and relationships while factors affecting the community’s perception of risk to HIV can include increasing number of orphans, information exchanges among social networks and transmission of HIV/AIDS messages by media.

Social proximity also refers to personal and community experience of the HIV epidemic. The relatively long incubation period of asymptomatic HIV infection followed by complex serious illnesses paves the way for a community to form their own explanations during the life and death of the effected individual. Such explanations and denial of HIV/AIDS can be compounded due to the stigma attached to HIV and AIDS (Macintyre & Kendall, 2005).

Stigma can be defined as a mark of disgrace or discredit which sets a person aside from others in a group/society and also as prejudice based on negative stereotyping (Byrne, 2001). Stigmatization is the process of establishing deviant identities. Stigma to HIV/AIDS can marginalize individuals within a community and burden them with indignities of the illness which, in turn, can prevent confrontation of the illness itself (Macintyre & Kendall, 2005).

The theory of social proximity of HIV and AIDS is particularly relevant to the present study not only because it addresses HIV/AIDS but also because it relates to the perception of risk in a disease endemic environment. The research driving this theory was conducted in Africa (Macintyre & Kendall, 2005) where the HIV prevalence and disproportionate risk of women is similar to that of India.

The individual and community response to HIV/AIDS examined by Macintyre & Kendall's work (2005) informed this study particularly with respect to probing the participant perception of individual and community vulnerability, risk and resilience for HIV in their sending and receiving environments.

BERRY'S MODEL OF ACCULTURATION: Acculturation is the process of cultural and psychological change that takes place as a result of contact between cultural groups and their individual members (Berry, 2005). Since the participants of the current study described are women who have been exposed to two environments (South India and the U.S.-Mexico border), the contexts related to acculturation and HIV risk were probed as part of the research domains.

Berry's model of acculturation (2005; 1992; 1991) operates on two principles: cultural maintenance and contact participation (Figure 1). Cultural maintenance is the extent to which individuals value and wish to maintain their cultural identity. Contact participation is the extent to which individuals value and seek out contact with those outside their own group, and wish to participate in the daily life of the larger society.

	Cultural Maintenance= YES	Cultural Maintenance= NO
Contact Participation= YES	Integration	Assimilation
Contact Participation= NO	Separation/Segregation	Marginalization

Figure 1: Berry's Model of Acculturation

Individuals experiencing acculturation are classified based upon the acculturation model as integrated, assimilated, separated or marginalized. Integrated individuals are those who want to maintain their identity with the home culture, but also want to take on some characteristics of the new culture. Assimilated individuals are those who do not

wish to keep their native culture identity, but would rather take on all of the characteristics of the new culture that they have come into contact with (Irwin et al., 2006). Separated individuals are those who wish to separate themselves from the dominant culture. Forced separation refers to segregation. Marginalized individuals are those who do not want to adapt from the old or new cultures.

Carolyn & Berry (1991) suggest that the study of acculturation phenomena requires the adoption of a cross-cultural perspective, including understanding and accepting the culture of the acculturating group on its own terms rather than treating it as a "minority" group. They also suggest that many acculturation phenomena can arise as a result of the interaction between the two groups in contact rather than residing solely in the acculturating group. Furthermore, they propose that not every individual enters into the acculturative situation, deals with, or reacts to it in the same way. Hence, the wide individual differences must be expected and recognized in the psychological outcomes of acculturation experiences (Carolyn & Berry, 1991).

The behavioral shift in acculturation occurs in three phases: cultural shedding, cultural learning and cultural conflict (Berry, 1992). Culture shedding and culture learning involve the accidental or deliberate loss of behaviors and their replacement by behaviors that allow the individual to better relate to, identify or fit with the larger society. Cultural conflict refers to that which occurs during this process. It is usually resolved by the non-dominant acculturating person yielding to the behavioral norms of the dominant groups. This behavioral shift often results in assimilation of values/changes (Berry, 1992). Acculturation is usually studied taking into account both the sending and receiving environment of immigrants. Proxy measures in acculturation include language,

social status, religious beliefs, gender roles, societal norms, educational status, employment, and social relations (Irwin et al., 2006).

The types of acculturation and the stages of acculturation were probed in the present study in relation to HIV risk and resilience of the participants. The contexts related to acculturation and HIV also were probed in terms of the sending and receiving environments of the study participants. As mentioned previously, acculturation will be process that all participants from the study sample in El Paso, TX/Las Cruces, NM, U.S. are subjected to on different levels at different points of time under different circumstances. Berry's model of acculturation also played a critical role in guiding this research by explaining the nuances, similarities and discrepancies in the acculturation experiences of the study population which may shape their risk for HIV.

The theoretical framework described above and their constructs were conceptualized with respect to the study participants' sending and receiving environments to aid in establishing the current study's research domains and designing the study instruments (Figure 2). The findings from the current study were examined in relation to their contribution to this theoretical framework (Figure 4).

CHAPTER 3: RESEARCH DESIGN AND METHODS

3.1 PRELIMINARY STUDIES

Preliminary interviews:

A total of nine individual interviews were conducted using a standardized, semi-structured, open-ended interview guide among female college students in South India over 2 weeks from December 2006 to January 2007. The interviewees were 18 years of age and above and were enrolled in college at the time of the interviews. Approval for data collection was obtained from the Institutional Review Board at the University of Texas at El Paso (UTEP). Data gleaned from the interviews indicated inadequate knowledge and misinformation about HIV risk and transmission among the interviewees. A majority of the participants (n=6) expressed a need and interest for gaining knowledge about HIV.

Participant Observation:

Participant observation of a female Indian immigrant in El Paso was performed in fall of 2007 as part of a qualitative research methods coursework. This participant observation served to provide information about the everyday activities of a female Indian immigrant housewife in El Paso and her account of life in India prior to immigration. The field work conducted during this observation also probed into the participants' perception of HIV as a social and personal issue. Findings from this participant observation aided in shedding light on the gender roles and socio-cultural norms related to HIV risk among women in India and, to a lesser extent on the perceptions about structural issues which may affect HIV risk among immigrant Indian women and their family members.

3.2 METHODS

This study utilized qualitative research methodology. Its theoretical framework was derived from the Health Belief Model (Bandura, 1977), Culture Theory (Handwerker, 2002), Theory of Social Proximity of HIV and AIDS (Macintyre & Kendall, 2005), the Social Learning Theory (2005), and Berry's model of acculturation (Berry, 2005, 1999). Exploration of the relevance and application of the constructs of vulnerability, risk and resilience in researching the cultural and contextual factors affecting HIV knowledge and risk for female Indian students in India and the U.S.-Mexico border region required the utilization of qualitative research methods, with particular emphasis on phenomenological and ethnographic traditions. This phenomenology type of qualitative inquiry utilized ethnographic data collection methods such as individual and group interviews.

3.3 QUALITATIVE APPROACH

Qualitative research methodology was chosen as the most appropriate approach for this study. Qualitative methodology is implemented in a natural setting where the phenomenon occurs, is multi-method in focus, and involves an interpretive, naturalistic approach to the study focus (Creswell, 1998). The study was conducted in the natural setting of the participants in order to describe and display their knowledge of HIV transmission and risk. In addition, this study also necessitated understanding of contexts related to the phenomenon of acculturation and HIV vulnerability, risk, and resilience among the study participants. This purpose required utilizing a phenomenology type of qualitative research.

Qualitative research is descriptive in nature with the investigator's observations play a critical role in adding validity to the instruments employed. The investigator gathers data about an occurrence, analyzes the data inductively based on the observed or reported experiences of the

participants and produces a descriptive report of the occurrence examined (Creswell, 1998). Creswell (1998) defines qualitative research as “an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem”. The outcome in qualitative research is considered as a process rather than the product, and involves collection of data in the form of words and/or pictures, and uses expressive language.

A qualitative research study starts with wanting to know “how” or “why” so that initial exploration provides an understanding about what is going on with the experience/phenomenon to be studied, as in contrast to quantitative research methods which ask “what”. The methodological skill, integrity, and sensitivity of the researcher contribute greatly to the validity and reliability of the qualitative data collected (Patton, 2001).

It is crucial that the investigator chooses the appropriate research paradigm and the research tradition(s) that comprise it. The five main traditions or types of qualitative studies include biography, phenomenology, grounded theory study, ethnography and case study. This particular research is grounded in the principles of phenomenology and ethnography. It examined the phenomena/processes which may influence HIV risk in the research population.

Phenomenology originated from the disciplines of Philosophy, Sociology and Psychology and focuses on understanding the essence of experiences about a phenomenon. Data for phenomenology is collected in the form of in-depth interviews and analysis. It involves making statements, understanding meanings, discerning themes and arriving at a general description of the experience. Phenomenology enables researchers to search for the, “essential invariant structure”, or meaning of the experience or phenomenon to be studied. The experience studied contains both outward appearance and inward consciousness based on memory. The methodology of reduction, analysis of specific statements made by the research subjects,

description of emerging themes, and a thorough search for all possible meanings are essential steps in phenomenological data analysis.

In a phenomenology type of study, it is crucial that the researcher obtains a clear understanding of the phenomenon after setting aside prejudgments and her/his experiences, reliance on intuition, imagination and/or universal structures. The four themes of a phenomenological study are: (1) conducting the traditional conception of philosophy which is a search for wisdom, (2) not forming any presuppositions about the phenomenon until they are validated, (3) the supposition that reality is not distributed among subjects and objects but focused on the object alone, and (4) that this reality of the object can be visualized only within the confines/meanings of the experience of the subject (Creswell, 1998).

Ethnography has its origins in cultural anthropology and involves participant observation by the researcher, i.e. observing day-to-day activities of the research subjects and/or one-on-one in-depth interviews with the members of the group/culture studied. This type of qualitative study is essentially a “description and interpretation of a cultural or social group or system” (Creswell, 1998). An ethnographic researcher investigates the behavior, language and artifacts in a culture or group. In addition, ethnography is guided by the structure and function of the study population. Structure describes the social configuration of the group which is studied. Function refers to patterns that aid in regulating the group’s behavior. Fieldwork is the foundation of ethnographic research and refers to extensive gathering of information about the group under study. Field work is usually initiated by key informants in the community. These also serve as consultants throughout the research and are considered essential to effective communication between the researcher and the group members (Creswell, 1998). The final report in an ethnography-type study is a comprehensive, complex, descriptive, holistic portrayal of the

phenomenon in the group including the group members' and researcher's views. The field work in the study described was informed in terms of interviews with key informants in the sending and receiving environments of the study participants and also general observation of both environments by the investigator.

The present study involved in-depth individual interviews of female South Indian students and focus group interviews with female and male South Indian students. These data collection methods were chosen due to the exploratory nature of the study which aims to investigate the contexts of HIV risk in an immigrant population as well as the in-depth type of investigation required. Standardized, semi-structured, open-ended individual and group interview guides were designed to collect rich, in-depth data on participant perceptions of HIV knowledge and risk which otherwise could be missed in a closed-ended survey. The patterns emerging from individual interviews were triangulated with those emerging from the group interviews. Conclusions were drawn based on the findings from interviews with participating female and male college students from India and key informants in both study environments. Implications of the study findings for future research are also discussed.

3.4 VALIDITY IN QUALITATIVE RESEARCH

Validity in qualitative research is as crucial as it is for quantitative research and must be assured at every stage of the study. The types of validity in qualitative research are descriptive validity, interpretive validity, theoretical validity, generalizability, and evaluative validity (Maxwell, 1992). Descriptive validity refers to the factual accuracy of the researcher's account and can be explained as primary and secondary descriptive validity. Primary descriptive validity is the way in which the observations are reported, and views activities as physical and behavioral events rather than ascertaining the meanings these activities have for the individuals involved.

Secondary descriptive validity refers to the accounts or interpretations of the events for which the inference is highly complicated. Interpretive validity is an emic perspective which pertains to the participants' perspective of the events/activities and has no counterpart in quantitative-experimental research. Qualitative research greatly aids quantitative research methods due to its interpretive validity in accounting for the participants' perspectives. Theoretical validity is closely related to construct validity and causal validity. It refers to the validity of an account as a theory of some phenomenon. Theoretical validity has two characteristics: the validity of the concepts and the validity of postulated relationships among these concepts.

Generalizability is defined as the extent to which one can extend the account of a particular situation or population to other persons, times, settings than those directly studied. Internal generalizability is more important than external generalizability in qualitative research. Explicit claims in qualitative research are rarely made based upon external generalizability. Generalizability in qualitative research is obtained through development of theory which in turn can be utilized to make sense of a particular phenomenon. Evaluative validity requires application of an evaluative framework to the object of the study but is not as central as other types of validity to qualitative research (Maxwell, 1992). This study was designed to ensure the descriptive, interpretive and theoretical validity of the findings gleaned while accounting for generalizability through theory. Rigor in researching the cultural contexts of HIV risk and identifying factors affecting the risk, vulnerability and resilience of female Indian university students in India and El Paso, TX/Las Cruces, NM, USA involved accurately describing and interpreting the events/activities encountered and the data collected while grounding the in the guiding theoretical framework.

General criticisms of qualitative research include small sample sizes, the purposive nature of the sampling method and the time-consuming and labor intensive nature of data collection and analysis (Winter, 2000; Marshall, 1996). In addition, visualizing validity as a negotiation of truths resulting from multiple and sequential observations of lived experiences elicits criticisms (Winter, 2000; Marshall, 1996). Advantages of the approach are demonstrated by the fact that these strategies can aid in studying hard-to-reach or hard-to-engage populations and, sensitive/stigmatized topics such as HIV/AIDS while including the situational factors of the study participants.

3.5 RESEARCH DOMAINS

This study probed the following research domains with relevance to the sending environment (India) and receiving environment (El Paso, TX/Las Cruces, NM, USA) of the study participants:

Gender norms/roles

1. Definition of gender roles.
2. Presentation of “maleness” and “femaleness”
3. Definition of a normative relationship between a man and a woman
4. Gender roles in childhood: behavior imbued in both sexes since birth
5. Any change/evolution of gender norms/roles in recent times: if yes, how?
6. Effect of gender roles in the male-female relationship.
7. Information on male-male and female-female relationships
8. Domestic violence: definition in each society; the way(s) people deal with it.

Sexuality and Sexual behavior

1. General sexual norms

2. Difference in sexual norms for males and females
3. Sexuality and intimacy (definition in the society; discussion of sexuality (if any): with whom?
4. Sexual behavior in the U.S. and while traveling to country of origin
5. Social network and activities pertaining to sexual behavior, among those networks

Alcohol and Drug Use

1. Definition of alcohol/drug abuse
2. Social drinking and drinking together as males and females
3. Norms for women and men regarding alcohol consumption (private and public) in both countries
4. Attitudes towards alcohol use
5. Influence of alcohol/drug use on life
6. Attitudes towards dating a person using alcohol/drugs.
7. Marijuana and hard drug use
8. Use/abuse of psychotropic prescription drugs

Social Networks

1. Social class: stratification
2. Caste system in India
3. Effect of place of origin on perception of suitability of partners for dating/marriage
4. Dating
5. Stigma
6. Diverse local and extended networks (including friendship, information transmission and practical aid)

Health and Illness

1. Traditional health ideas/beliefs which influence HIV prevention or accessing care
2. Ideas/perceptions about body parts/body products
3. Ideas about conception/sex/intimacy
4. Issues of shame/embarrassment
5. Sexual practices/beliefs
6. Effect of sexual practices/beliefs on sexual behavior/expression of sexuality

Migration and Acculturation

1. Socio-economic status in country of origin
2. Reasons for migration to the U.S.
3. Acculturation/adjustment stress
4. Quality of life in the border region (complicated residential arrangements in the new site, sense of temporariness etc.)
5. Peculiarities of student life and student subculture as a contextual factor and, in comparison to the border context with relevance to risk and resilience
6. How does the individual deal with stress?
7. Travel to the country of origin (mobility and migration)
8. Other structural elements of migration process including leaving parental/kin group authority and personal separation and reconnection in new site.
9. Probability of resilience in receiving environment owing to migration

HIV/AIDS Knowledge

1. Knowledge about HIV/AIDS: Modes of transmission, prevention.
2. Perception of high risk groups

3. Experience with HIV (knowing/seeing people with HIV/AIDS)
4. Perception of susceptibility to HIV/AIDS
5. Perception about getting tested for HIV (Knowledge and intent)
6. Disclosure of HIV testing, test results and/or status
7. Information the participant wants to gain about HIV/AIDS

3.6 SAMPLE

Sample Inclusion and Exclusion Criteria:

The inclusion criteria for study participants from South India were that they have they had to be women or men aged ≥ 18 years, currently attending a university/college or must have graduated from college within the past year, and must never have lived outside India. The inclusion criteria for participants in the U.S.-Mexico border region (El Paso, TX/Las Cruces, NM region) were that they have to be women or men ≥ 18 years, be of South Indian origin, attending universities/college in El Paso, TX or Las Cruces, NM or must have graduated within the past year from the same, and must have migrated to the U.S. within the past three years.

3.7 RESEARCH SITES

Data for this research was collected from two research sites: the U.S.-Mexico border region (El Paso, TX/Las Cruces, NM region) and a city in South India.

Selection of Data Collection Site in India:

The primary data collected for this study in the El Paso, TX- Las Cruces, NM region. Other data were collected from a city in South India to investigate the interactions between factors in the sending and receiving environments of the study participants living in the U.S. This South Indian city was selected because most students from India who are attending

colleges/universities in the TX/NM- Mexico border region originate from South India. The South Indian State (Tamil Nadu) in which the data was collected was one of the two represented by students attending colleges and universities in the TX/NM border region. In addition, the city in South India in which data was collected is a major site for immigration from India to the U.S. It is also a site where individuals often migrate from rural areas and other States in India to pursue higher education and employment.

Study Population:

The study population was comprised of female Indian students attending Universities in South India and, the El Paso, Texas/Las Cruces, NM region. In addition, male South Indian university students and community key-informants in South India and El Paso, TX/Las Cruces, NM were interviewed for the study.

Study Sample:

The study compared two groups of participants from the study sample. One group involved thirty-one female Indian university students, ten male Indian University students and nine key informants in a city in South India. Another group consisted of 21 female Indian university students, five male Indian University students and six key informants in the El Paso, Texas/Las Cruces, NM region (N=82). All participants were compensated with U.S. \$20 for their time and efforts.

Protection of Human Subjects:

This study was approved by the Institutional Review Board at the University of Texas at El Paso Protocol Number 106158-1 and the office of the State Secretary of Health for the data collection site in South India. A report describing the interviews conducted in South India was submitted to the Office of the State Secretary of Health.

3.8 DATA COLLECTION METHODS

Data collection methods utilized for this study were:

- (i) Individual in-depth interviews with 21 female Indian University students using a standardized semi-structured open-ended interview guide in a city in South India and individual in-depth interviews with 15 female Indian University students in the El Paso Texas/Las Cruces, NM region using a standardized interview guide.
- (ii) One focus group interview with 10 female Indian University students in a city in South India and one focus group interview with six female Indian University students in the El Paso, Texas/Las Cruces, NM region utilizing a standardized, open-ended focus group guide.
- (iii) Nine key informant interviews in a city in South India and six key informant interviews in the El Paso, Texas/Las Cruces, NM region utilizing a standardized, semi-structured, open-ended in-depth interview guide.
- (iv) One focus group with 10 male Indian University students in a city in South India and one focus group with five male Indian University students in the El Paso, Texas/Las Cruces, NM region utilizing a standardized, open-ended focus group guide.

In-depth interviews:

Qualitative interviewing has three approaches: the informal conversational interview approach, the general interview approach, and the standardized open-ended interview. The informal conversational interview approach involves spontaneous generation of questions during a natural interaction process and can take place even without the subjects realizing that they are being interviewed. The interview-guide approach obtains common information about a fixed set of issues from a group of people and requires the interviewer to adapt the wording and question

to each specific respondent. The standardized open-ended interview takes every respondent through a standard set of questions worded similarly in the same sequence. During standardized open-ended interviews, the researcher strives to maintain neutrality while focusing on data collection. Ethical dilemmas can be minimized and/or avoided during standardized interviews by carefully considering the following issues: (i) taking care not to make promises to the interviewee if they cannot be kept, (ii) risk assessment pertaining to the interviewee, (iii) confidentiality (iv) the type and process of informed consent to be provided, (v) access to and ownership of data collected, and (vii) the availability of expert advice on ethical dilemmas which may arise (Patton, 2001).

The type of questions asked during an interview can be sensitizing, theoretical, structural and/or guiding, depending on the purpose of the data collected and paradigm of inquiry (Strauss & Corbin, 1990). Sensitizing questions aid the researcher to identify issues related to the data collected while theoretical questions enable the researcher to collect data on varied experiences of the participants while connecting concepts. Structural questions guide theory development and guiding questions help navigate the interview process. Copies of the in-depth interview guide instrument for each research site are attached in Appendix B and Appendix C.

Focus Groups:

Focus groups provide a rich source of data due to the communication between research participants. Data collected from focus groups thrives on group interaction. This type of interviewing can be particularly useful when trying to understand not only what people think but how they think, and why they think that particular way. Tapping into interpersonal communication through focus group is essential when studying group norms and/or cultural values (Kitzinger, 1995). A focus group is a special type of group composed of seven to ten

participants who are selected as part of the group because they have certain characteristics in common which relate to the topic discussed. These are conducted in a “permissive non-threatening environment” by a skilled interviewer. Some experts suggest focus groups of two to ten can elicit valuable data (Walden, 2006).

The questions asked during focus groups may be deceptively simple while serving to probe deeper relationships between concepts under study. Research shows that individuals influence each other with their comments and that in the course of a discussion, the opinions of an individual might change. A focus group ideally promotes self-disclosure among participants. The researcher has the opportunity to identify shared and common knowledge by analyzing the operation of humor, consensus, dissent, and the different types of narrative within the group members (Kitzinger, 1995). This unique characteristic of focus groups makes it a data collection technique often used in cross-cultural research because of its increased sensitivity to cultural variables (Kitzinger, 1995).

The selection of participants, the nature of questioning and the establishment of focus group rules play key roles in enabling a permissive environment for discussion (Kreuger & Casey, 2000). The participants in a focus group are often strangers, or sometimes, persons who are acquainted but have minimal contact with each other. During a focus group interview, the interviewer would typically promote positive and negative comments without making judgments while controlling body language which may communicate approval or disapproval. Focus group participants who are similar to each other tend to communicate better. Homogeneity among participants is desired and this homogeneity is also reinforced in the introduction to the group discussion.

Focus group interviewing has several advantages and disadvantages. The advantages of focus group interviews are (i) natural interactive conditions of the respondents during the interview, (ii) flexibility to probe and explore participants' responses; (iii) high face validity, (iv) the ability to produce results in three to four discussions, and (vi) the ability of the focus group to increase the sample size (Kreuger & Casey, 2000).

The general disadvantages of focus group interviews in general include (i) less control on the researcher's part, (ii) their labor intensive and time consuming nature, (iv) possibility of differences in the groups involved, and (vi) the logistics involved organizing and conducting the interviews (Krueger & Casey, 2000). The potential for disclosure and confrontation given the sensitive nature of HIV/AIDS discussed during the focus groups should be strategically considered prior to conducting the group interviews. Strategies including adequate training of the interviewer, and access to psychological help if need arises were addressed before the interviews were conducted for this study. Copies of the focus group guides for each research site are shown in Appendices A, D and E.

All focus groups for the current study except the one with male Indian students in the U.S. were conducted by the investigators. Focus group participants in both research sites were recruited with the help of the key informants, the investigators' contacts in the student networks, and other study participants. The female focus group in the U.S. was conducted in a participants' apartment while the male focus group was conducted in a local office. The female and male focus groups in South India were conducted at a local office venue which was provided through the investigator's contact in India. Participants in India preferred to be interviewed at a venue outside their homes. The focus groups lasted for a maximum of two hours. The focus groups in India were followed by many questions the participants put forth for the investigator. In general,

the focus group participants in South India seems more open to discussing the interview domains in comparison to the focus group participants in the U.S.

Key-informant Interviews:

Six key informants from the El Paso, TX/Las Cruces, NM- Mexico region and nine key informants from South India were interviewed. These key informants were selected based on their potential experience and knowledge of the study population members in both sites. The role and availability of the key informants pertaining to the sending and receiving environment of the study sample was also considered as part of selecting these informants. The key informants also were used to recruit study participants. Informed consent forms were provided to all key informants. The key informants were interviewed by utilizing customized individual open-ended interview guides which probed their perceptions and knowledge about the target population, research domains and research sites. The individual interview guides were formulated based on each key-informant's area of expertise, environment and the contexts of association with the target population.

The key informants in the U.S. included two members of the Indian Student Association, one female student from South India, one member of the local Indian community who is also a graduate of a local university, one male student from South India, and one female student from North India. The male and female students from South India and another female student from North India served to provide valuable insight into the study population's network characteristics from a perspective different from that of individual or focus group interview participants owing to their role as informants in the study. Similarly, the local Indian community member who has interactions with current student networks provided insight into the current and past network characteristics related to the local South Indian student population in relation to the domains

probed in this study. The key informants belonging to the Indian Student Association provided useful information on current patterns in migration, socializing and risk potential networks among the study population. Due to the frequent nature of interactions and relatively smaller network size of the local South Indian student population in the TX/NM- Mexico region, the responses and information provided to key informants in relation to particular themes and sections in the data analysis are documented without identifying the role/relation of the key informant to the target population in the U.S.

The key informants at the data collection site in South India included one male college student, one female parent of a male college student, one female parent of a female college student, a psychologist who frequently counsels college students, a local government health official, a female college professor, a local recruiter who recruits college students from South India to universities abroad, a local health care professional who teaches college students and, also a local woman who frequents the pub scene. The key informant who frequents local pubs was recruited after pubbing was mentioned frequently in interviews conducted in the U.S. and in South India. The parents of the Indian college students were interviewed to gain insight into their knowledge and perceptions about risk behaviors among college students and also their perceptions about HIV risk for students such as their children. Similarly the health officials interviewed provided information pertaining to perceived local risk behaviors for HIV and the prevention services available. The student recruiter and male student provided information on HIV risk behaviors and migration patterns of the study population. The information provided from these key informants in South India is documented in the data analysis section with responses from other study participants in relation to the specific themes discussed. Different from key informants in the U.S., these belong to a very large social network. Hence, more

specific information about these key informants' association with the study population is mentioned where necessary in the results section.

Justification of sample size:

Sample size in qualitative research is usually determined based on the type of inquiry, purpose of the study and the judgment and experience of the researcher with respect to the quality and utilization of the data collected (Sandelowski, 1995). In addition, the type of purposeful sampling also aids in determining sample size in qualitative studies (Sandelowski, 1995). The initial sample size estimated for this study was a maximum of 25 individual in-depth interviews with female Indian students at the two research sites or a total of 50 individual interviews. This sample size of a maximum 25 individual interviews per site is justified on the basis that the study sample is relatively homogenous regarding place of origin, education and socioeconomic status. It is recommended that 20-30 individual interviews are usually required to reach enough saturation of categories in the data (Creswell, 1998).

A phenomenological study such as this which seeks to understand phenomena such as immigration and acculturation with respect to HIV risk usually requires 10-50 descriptions of the experience. However, the evidence indicates that at least 25 descriptions of the experience (participant's perspectives of the lived experience) are required if the research also plans to utilize the findings in future to design an instrument to test the hypotheses generated (Hirsh et al., 2007; Stevens & Galvao, 2007; Shedlin et al., 2006; Bucardo et al., 2003; Sandelowski, 1995).

The current study utilizes semi-structured interview guides. The sample size is required to be sufficient for theoretical and phenomenal variation in order to provide an understanding of how diverse factors contribute to the overall phenomena being studied. Overall the sample in a qualitative research study must be large enough to support "claims of informational redundancy"

(Lincoln & Guba, 1985) but not too large to prevent detailed analysis of the data since qualitative research involves the experiences of persons observed/interviewed being the objects of research rather than the persons themselves (Sandelowski, 1995).

Handwerker (2005) argues that sample size in studies examining cultural variations of an experience/phenomenon is determined by the degree of similarity among the cases (participants) sampled. Thus, accurate and precise answers to studying culture through ethnographic methods can be achieved only by ensuring that maximum variations of the experience studied are included. Actively ensuring such variation in the experiences studied also forms the basis for utilizing a purposive sampling method such as the one used in this study. Purposively ensuring maximum variations of the experiences also changes the meaning of power with relevance to ethnographic methods studying culture and hence, determination of sample size. Power in a qualitative study refers to the reliability and validity of the inferences made about the content of behavioral similarities among the participants interviewed (Handwerker, 2005).

Ethnographic analysis differs from variable analysis. Sample size is determined by viewing the similarities between the experiences studied rather than requiring large sample sizes or random sampling. The selection of key-informants and other participants through a snowball sample is almost always employed in ethnographic research. It is also recommended that the sample design should allow for tracking the similarities between the experiences (patterns) and expansion of sample size based on the same in order to efficiently study cultures and cultural boundaries (Handwerker, 2005). The experience of the investigator plays an important role in determining the final sample size in a qualitative study. Specifically, an experienced/expert qualitative researcher usually requires lesser sampling units than a beginner (Sandelowski, 2005).

Based on the above evidence, it was decided *a priori* that a sample comprising 25 individual in-depth interviews with female Indian students at each site and 10 individual interviews with key informants from each site is justified in order to allow for maximum phenomenological variation, theoretical saturation and sufficient reliability and validity of inferences. At the same time, it was also determined that data saturation would dictate the final sample size as the data collection progressed.

Data from the focus group interviews (one at each site) with female Indian students was collected to aid in triangulating group data with that of individual data for the purpose of probing the research domains. Data from the focus group interviews (one at each site) with male Indian students was used to provide information on the similarities and variations of the phenomena studies from the perspectives of the men in the research communities and also to aid in comparing their perspectives with those of the women. The size of each focus group was estimated at ten participants per focus group. Literature shows that two - fourteen focus group interviews are required to elicit valid information (Walden, 2006). Kreuger & Casey (2000) recommend conducting at least three focus groups of five to ten people with one type/category of participant in order to gain saturation of data. The purpose of the focus groups interviews and the resources available to conduct them also helps to determine the minimum number of focus groups. This study utilized focus group interviewing as a secondary research source in order to triangulate the findings from group interviews with individual interviews. Given time and funding constraints, it was decided that two focus groups will be conducted among female Indian college students and two focus groups should be conducted among male Indian college students.

The final sample size was 82. It was comprised of 15 individual interviews with female South Indian college students, one focus group with six female South Indian college students,

one focus group with five male college students and six key informant interviews in the primary border research site. Twenty-one individual interviews with female college students, one focus group interview with 10 female college students, one focus group interview with 10 male college students and nine key informant interviews in the secondary research site (a city in South India). Adequate time was allowed to recruit participants in the El Paso, TX/Las Cruces, NM region but the initial participant estimate could not be recruited. The South Indian students who participated in the interviews and the key informants explained that potential participants who were eligible for the study were not at dearth. However, they were hesitant to participate in this study because it involved discussing HIV and issues related to HIV. This finding by itself was not surprising given the stigma existing towards HIV in India but the fact that recruitment of participants for the study in South India itself was not as difficult made this finding interesting.

Sampling method and participant recruitment:

The sampling method for this study was adapted from respondent driven sampling (RDS) (Figure 3) a method which aids in making estimates about specific traits in the social networks connecting the study population (Heckathorn, 1997, 2002). Respondent driven sampling is a snowball type of sampling which uses dual incentive process which provides rewards to the participants for being involved in study and recruiting others into the study. The RDS is a variation of chain-referral sampling methods that were first introduced by Coleman (1958) under the name snowball sampling (Salganik & Heckathorn, 2004). Participants are not required to identify their peers. A disadvantage of RDS is the probability of homophily bias, which refers to the oversampling of subjects with larger personal networks. Respondent driven sampling is traditionally used to recruit study participants from hard-to-reach populations (Heckathorn, 1997). Hidden populations are also difficult to sample using standard sampling techniques due

privacy concerns especially while studying HIV/AIDS (Heckathorn 2002). When the study was being designed, female South Indian students were assumed to be difficult to sample due to the sensitive nature of the topic probed and the HIV-associated stigma. Hence respondent driven sampling was used.

Standard statistical methods often provide no way to make accurate about the characteristics of hidden or hard-to-reach populations such as drug users, new immigrant populations, persons with mobile lifestyles etc. Respondent driven sampling helps investigators make unbiased estimates about traits which are prevalent in these hidden populations (Salganik & Heckathorn, 2004). The U.S. Center for Disease Control and Prevention (CDC) and other international health organizations frequently employ respondent-driven sampling because of its many advantages (Salganik, 2007). Respondent-driven sampling allows researchers to select a sample using a technique called snowball sampling in which people recruit their friends to participate in the study. In general, chain referral methods are characterized by the difficulty of making statistical inferences due to samples that do not resemble simple random samples and the choice of the first set of persons to be included in the study which may result in only people with a large network of friends to be included in the sample (Salganik & Heckathorn, 2004).

Snow ball sampling is characterized by (i) identification of respondents who are used by researchers to recruit other respondents; (ii) advantages of sampling special/hidden populations despite the fact that it contradicts principles of conventional sampling methods; (iii) qualities which aid in sampling frame construction and error estimation; and (iv) the disadvantage of having a tendency to exclude socially isolated individuals in the hidden population studied (Atkinson & Flint, 2001).

Snowball sampling is subject to multiple biases if one uses the sample obtained to directly make inferences about the population. The biases usually depend on the manner the chain referrals take place. One of these disadvantages is “masking” where respondents do not provide adequate contact information because they may perceive that they are violating the confidentiality of their friends and the other disadvantage is the tendency to refer persons of similar socio-demographics with whom they have social ties as mentioned previously (“homophily bias”) (Heckathorn, 2002). However, if the RDS snowball sample is used to make estimates about the social networks connecting the hidden population, then unbiased estimates with respect to a specific trait could be made about the proportion of the population involving that social network (Salganik, 2007; Salganik & Heckathorn, 2004).

The World Health Organization’s report on STI surveillance concludes that the inability of researchers to estimate the characteristics and behaviors of hidden populations hinders efforts to understand and control the spread of HIV (WHO, 2000). Standard sampling and estimation techniques require the researcher to select sample members with a known probability of selection (Salganik & Heckathorn, 2004). This often means that researchers must have a sampling frame composed of a list of all members in the population. The selection of study participants from a sampling frame may not be an option because such a list may not exist for hidden populations in the first place. Barriers for locating members of the target population could include both the sensitive nature of the subject/issue to be discussed and/or the difficulty to distinguish members of the target population from the general population.

These barriers to constructing a sampling and estimation scheme can be overcome using additional information available in a social network. Doing so may be cost effective this also ensure better accuracy. In the RDS method, the selection of the first “seeds” or the first set of

respondents is critical. The investigator must select these seeds strategically based on inclusion and exclusion criteria of the sample. These “seeds” in turn recruit more persons to participate in the study until the desired sample size is reached. This method has been shown to be effective at connecting pockets or networks within hidden populations.

Although a sampling frame of potential study participants (students from South India) was available for the current study, the sensitive nature of the topic to be discussed required the purposive selection of “seeds”. Such selection of “seeds” was based on sample inclusion criteria as the first set of respondents. These respondents then recruited more participants. The recruitment of participants for this study did not utilize the dual incentive methods due to the logistical difficulties in doing so. Since the current study was exploratory in nature, the Indian students who functioned as “seeds” were selected from varying networks or subgroups (Indian state of origin, educational background etc.) within potential participants in order to gain insight into the levels of HIV risk and resilience. Given this sampling method, the fact that focus group participants in this study may belong to the same social network was considered during the interviews. Questions regarding the research domains were asked only with references to group perceptions and opinions particularly during the focus groups and not in a format that referred to personal/self information.

Time frame:

Data collection for this study was conducted from March 2009 to October 2009 in both study sites after approval for the study was received from the UTEP IRB in February 2009.

Data collection procedures:

All individual and group interviews except for the male focus group in the El Paso, TX-Las Cruces, NM region were conducted by the PI (T.Mangadu). Written informed consent was

administered to all participants and a signed copy of the informed consent form was provided to all participants. Individual and group interviews were conducted in venues which ensured the privacy of the study participants. Interview venues were also selected based on participants' access to transportation. All interviews were recorded on a digital audio recorder. As part of the informed consent process, study participants were informed of their right to stop participating in the interview at any point during the same, should they wish to do so. The interviews were transcribed for data analysis.

CHAPTER 4: DATA ANALYSIS AND RESULTS

All interviews were recorded on a digital audio recorder and were transcribed by the PI (T. Mangadu). Notes from the interviews regarding the interview/research environment and interpretations of participant behavior were be utilized as an adjunct to the individual and group interview data. Data analysis was an ongoing process. It began with the start of data collection and guided the research with respect to participant recruitment of participants, evolving probes for use in future interviews, examining data saturation, and estimating when to stop data collection. Three sets of data from individual interviews with female South Indian students, individual interviews with key informants and focus group interviews were collected for the research domains of this study for each research site.

Qualitative coding was done for all data collected in order to identify and establish emerging patterns and themes with respect to the research domains probed. The coding was initially done by the PI according to the research domains probed and then the data under each domain was further coded according to the emerging themes. The coding system was flexible to accommodate new patterns in the responses collected. Similarly, coding was also done at multiple levels because many interviewees often discussed multiple research domains/issues at the same point of time during an interview. The data and emergent themes from all three sets of data from both research sites were triangulated with reference to the research domains probed. The collected data was first examined in terms of the meanings of the experiences/issues probed for the individual study participants and then grouped by “meaning units” according to group statements to arrive at findings for the study’s three main research questions (Creswell, 1998).

Selective coding of data also was used when certain emergent themes were observed to be common among the different study participant groups.

The data analysis and interpretation of findings for this research were guided by the multi-level theoretical framework which formed the foundation of this inquiry. The individual, network, environmental and socio-cultural contexts regarding HIV risk attitudes and knowledge were based on the perceptions of research participants. These were explored in relation to the theoretical domains of migration and acculturation.

In order to ensure the interpretive validity of this phenomenological study, data analysis results are reported in three sections as recommended by qualitative experts. The description of the researcher's experience is followed by the analysis of participants' experience and interpretation of the responses of the culture-sharing groups- female South Indian college students in the El Paso, TX/Las Cruces, NM- Mexico region, U.S. and their counterparts/peers in South India. This type of data presentation, which includes reports by the participants and interpretation by the investigator separately, provides opportunities for the audience/readers to form and verify their interpretations of the analysis with those made by the researcher. The interpretations and inferences made by the researcher based on the data presented is discussed in the Discussion, Conclusions, and Implications chapters following the data analysis. As in any ethnographic or phenomenological reporting of study observations, the "description" portion of this analysis will be presented in first-person as a narrative.

4.1 DESCRIPTION OF RESEARCHER'S EXPERIENCE

My experience in conducting this research can be described in a nutshell as "outsider-within". This is a term used by Collins (1986) to originally describe individuals from a particular group who possess knowledge and awareness about behaviors/patterns/norms of the dominant

group but who do not have the privileges a true insider of the group would usually have. This lack of privileges due to not being considered as a true insider of the group (the study participants) is not necessarily a disadvantage. Collins (1986) and Weber (2006) emphasize that being the “outsider-within” is serendipitous in terms of providing an “objectivity” which results from being both close and remote with the group in question, multiple venues for individuals of the group to confide to the “outsider-within” in ways they wouldn’t normally do within the group, the acumen for the “outsider” to discern themes and patterns not usually visible to true insiders and “creativity that is spurred by marginality”. Weber (2006) also contends that being an “outsider-within” can also enable an investigator to recognize and pose effective research questions with respect to health disparities. Such question may help to address the existing divide between advancing theory in relation to a particular health disparity and taking action to eliminating the disparity.

I am a female student from South India who immigrated to the U.S.-Mexico border region for the purpose of marriage. This situation did equip me with an inherent knowledge of some patterns and norms related to the experiences of the study sample/population even though these perceptions could be related more to the acculturative experiences of this population almost two decades ago. However, I assumed the role of an outsider in relation to the study population with respect to the possible evolution of norms in the sending environment of the study population, prevalence of specific HIV risk behaviors in this population, and immigration trends and acculturation experience.

During the data collection phase of this research, I frequently observed that the study participants in the U.S. and South India were generally open to speaking with me as a peer because from the same sending environment as them. Interestingly enough, participants in the

U.S. seemed to both perceive me both as an outsider because I have been living in the U.S. for more than a decade as well as an insider during the interviews as I am a fellow student from South India. On the other hand, study participants in South India appeared eager to contribute to my research because I am from India and that they perceived that they were helping me (an insider). However they related to me as an outsider during the interviews because I am not a typical recent Indian immigrant student. Study participants in India and the U.S. were curious to know more about my personal and professional life and often asked me questions pertaining to the same after my interviews with them concluded. These questions ranged from what I will be contributing to this population through this research and why I chose to study the research topic to how old I am and if I plan to permanently live in the U.S.

Many times during the individual and group interviews, I found myself simultaneously having to exhibit and maintain the “empathetic neutrality” required of a researcher pursuing qualitative inquiry while being subjected to a mix of emotions resulting from the responses the study participants provided. The emotions elicited in me by the participants’ experiences include admiration for these women’s capacity to acclimatize to a new environment despite having led a sheltered life in India, surprise at their decision to migrate to an environment where they did not have an extensive social network, and confusion at the inconsistencies many participants exhibited in relation to adherence and disregard to certain socio-cultural norms from their sending environment. I was also dismayed at the almost non-existent perceived self-susceptibility to HIV among the participants while feeling relieved when the participants said that they were currently not engaging in HIV risk behaviors. On the other hand, I was perplexed at many participants’ disconnect in perceiving vulnerability/risk for HIV for a woman despite recognizing the prevalence of risk behaviors in their networks (especially during the initial parts

of the interviews). Finally, when most of my interviews ended, I was left with a feeling that can be explained as a combination of frustration, sadness and anger. I was frustrated and sad due the resignation at least 50% of the participants conveyed in relation to their potential inability to ask their future partner for a HIV test. The structural inequality that disempowered women against HIV bothered me. In contrast, the informed and feminist notions expressed by these women pertaining to their individual notions of how a woman (Indian or not) should be empowered against HIV was both confusing and awe inspiring.

In addition to the conflicting realizations stated above, my conversations with the women and men who graciously agreed to participate in this research study and share their experience with me shed light on two concepts. The first one being that empowerment especially in women differs in its conceptualization and manifestation in different cultures and regions. Second, certain types of (commonly misinterpreted) exhibitions of so-called empowerment/independence may actually increase a woman's vulnerability and risk for HIV depending on the context.

For example, the majority of women who participated in my study described themselves as "conservative" and said that they do not believe in having multiple sexual partners and/or pre-marital sex owing to the socio-cultural expectations they were exposed to in their sending environment. These women could be perceived as individuals lacking the freedom to make a choice owing to inequalities in their environment/culture (especially by a person from a different country/culture). On the other hand, they can be regarded as women who are empowered against HIV owing to their high educational levels and their decision to not engage in risk behaviors. However, these women can also be considered to be disempowered against HIV when it comes to the context of their marriages, especially if arranged, due to their lessened ability to demand a HIV test for their future partners.

In contrast, a woman (Indian college student or not, in the U.S. or elsewhere) who considers engaging in HIV risk behaviors as a demonstration of empowerment or liberty, without being equipped with the knowledge and strategies to reduce HIV risk may actually not have any empowerment to begin with. Similarly, the experiences of study participants in South India and U.S. made me ponder the role of environment in affecting their perception of HIV risk and action to reduce the same. After most of my interviews, I found myself reflecting that many women may not be able to take action to reduce their HIV risk even when they have adequate HIV-related knowledge and availability of prevention services. The inequalities in their environment may prevent them from utilizing these services.

I also realized that such inequalities could be different, contrasting and/or subtle in the sending and receiving environments of immigrant women. In addition, as an “outsider within” who had immigrated to the U.S. more than a decade ago, I constantly reflected on the potential effects of the current trends in globalization and the increased channels of communication on my study participants’ acculturation process in contrast to mine when I first arrived in the U.S. I considered myself fortunate to be able to make this comparison as a result of being an “outside within”

As for the study environments, the interview venues in the U.S. and South India greatly differed. In the U.S., more than half of the individual interviews were conducted in participants’ homes while in South India all interviewees preferred to be interviewed outside of their homes. The following description portrays my typical individual interview environment in the U.S. and also one of the interviews which greatly affected me in terms of perceiving the potential vulnerability of my study participants to HIV.

The first thing I noticed when I enter an interviewee's apartment was how reminiscent the interior arrangement/décor is of a home in urban South India even if the interviewee was sharing a small apartment with five other female South Indian students in the U.S. There was a corner of the living room which was transformed into a prayer area where small figurines of Hindu deities were arranged on a table, the kitchen counter was overflowing with Indian grocery items and one of the roommates was in the process of cooking an Indian meal – *chappathis* (Indian flat-bread) for dinner. The books, backpacks and laptop cases of the students were placed at different places in the apartment. Most of my interview participants were dressed casually in jeans and T-shirts; few participants who interviewed with me in their apartments were wearing *salwar-kameez*. The interview participant invited me in and introduced me to her housemate and asked me to be seated in the living room of the apartment. She then informed me that she is ready for the interview. When I suggested that maybe we should conduct the interview in one of the bedrooms where she would have more privacy, she said that it was OK with her to have her housemate present during her interview. We conducted the interview in one of the rooms only after I insisted about ensuring privacy as part of the study requirements. As I was conducting the interview, I could hear the apartment doorbell ring on and off when each housemate came after her class or left for a class.

After my interviews, especially after the ones I conducted later in the day, participants and their housemates frequently enquired if I had had something to eat and also, suggested I eat something before I proceed to my next interview. I felt overwhelmed and touched when participants offered to share their dinner/lunch with me. Here were these women, living with limited resources in a new environment with a busy work and class schedule and, still taking the

time to talk to me and be hospitable. The social support fostered within these students was palpable in the way they related each other and shared resources.

The interview referred to in this paragraph is a good example that depicts my experience as a researcher faced with the necessity to be objective and neutral while being accosted (often unexpectedly) with interview responses. The responses could have elicited very subjective and emotional reactions from me had it been an everyday conversation and not a research interview. This interview participant, in particular, was a student who externally resembled any typical college student: jeans, t-shirt, and hair casually tied up. During our interview I came to know that she was from an urban area in South India from a not-so conservative family that was also well educated. After the interview concluded, I asked her (as I usually did to all interview participants) if she had any questions for me. Many of my previous interviewees posed questions to me after our interviews about issues directly relating to HIV spread through marriage, same-sex behaviors, contraception etc., which I was completely prepared to answer. Hence I expected similar questions from this participant. But what she did ask me was, “What is sex? What is romance? Can you tell me the difference?”

The above questions by themselves did not shock me as they were fairly simple and direct and I did not have to be a HIV researcher to answer them. But what impressed me was the implications of these questions with respect to her vulnerability to HIV infection. This individual has lived in an environment where social norms and inequalities put women at risk for HIV, has migrated alone internationally, and is currently living alone in an environment where she could be constantly exposed to risk behaviors in her network. In addition, she could be experiencing acculturative stress. This individual is also well-educated (she is pursuing her graduate professional degree) and possesses reasonable levels of HIV-associated knowledge. This interview

implied how formal education, HIV/AIDS associated knowledge and resilience in acclimatizing to a new environment may not translate to reduced HIV risk. The constructions of sex, sexuality and romance/courtship can dictate sexual relationships/practices and shape a woman's HIV risk. For example, many participants told me that ideally, a man should "teach" the woman about sex. If this is the expectation, the manner in which such expectation can affect the notion of courtship and marriage can prevent a woman from negotiating condom use even if she is aware of the benefit of doing so.

The interview responses I was receiving in relation to how an ideal Indian women should be in terms of expressing her sexuality and knowledge about sex according to the Indian socio-cultural norms were at times contrasting to what the participating female students reported as their visualization of an ideal woman. All female participants indicated that they did not condone all such socio-cultural expectations and that it was not fair to have such expectations of women. However, they seemed to be resigned that some of these expectations and the social consequences of not abiding to such norms are unavoidable.

The above interview also had a powerful impact on me in multiple ways. For one, after this interview (which was one among the initial interviews I conducted for this study), I had to reflect on my role as a researcher who is prepared for dealing with situations during fieldwork which warrant absorbing what the participant says and addressing the questions posed. In addition, I had to probe relevant research domains in a naturalistic manner based on processing the information I had just received. However,, I had to ensure that my personal reactions to the situation/responses are kept at bay despite the powerful the implications of the responses. This reflective practice aided in honing my skills in performing fieldwork.

Research participant recruitment for this study was a challenging experience in the U.S. study site. The key informants from the population and the women and men who agreed to participate in the individual and focus group interview in the U.S. informed me that potential research participants were hesitant to participate in the study because the interviews covered HIV/AIDS and the sensitive issues related to this condition. The key informants also related such hesitation to participate to the stigma towards HIV/AIDS in the participants' sending environment.

Thus considering myself a bit enlightened from engaging in my initial fieldwork in the U.S. with my primary research sample, I set off to South India to conduct more interviews. This time however, I was expecting and prepared to handle similar hesitation about participating in the study. Instead, to my pleasant surprise I had little difficulty in finding students who were willing to interview with me. Of course, the extensive student network in South India could have been a factor in such participation, but this participation despite the reported stigma to talking about HIV/AIDS and sexuality was puzzling to me. However, I did observe that my interviewees in South India did not want to be interviewed in their homes. This choice of interview venue was based on participants' decreased comfort levels at discussing HIV/AIDS in their own homes and to a certain extent, access to transportation.

I had visited South India after 4 years for this research study. Most of my interview participants in India were open to discussing all research domains probed. However, they were hesitant to refer to sex directly. I observed that the female participants in South India reported being exposed to HIV prevention programs in their colleges/universities. What impressed me most from my interviews in India was that most women said that they had never examined their

personal HIV risk, particularly through marriage. As one participant explained, “Before this [interview] I have never thought about it [risk for HIV through marriage] that way”.

In general, I experienced an environment which is different and similar in certain ways to the how it was when I immigrated to the U.S. The extensive social networks, support and traditional socio-cultural norms were still existent. However, the trends in internal and international travel, the multinational company boom, the venues for socializing, and the spending power among the younger generation had considerably changed. Such changes I observed in South India and my interactions with my study participants made me wonder if acculturation to the U.S. culture/environment could actually begin in India before the Indian students actually arrive in the U.S.

4.2 PARTICIPANT DEMOGRAPHICS

Fifteen in-depth individual interviews with female Indian college students, one focus group with six female Indian college students and one focus group with five male Indian college students were conducted in the El Paso, TX-Las Cruces, NM border region (Table 1). Twenty-one in-depth individual interviews with female Indian college students, one focus group with ten female Indian college students and one focus group with ten male Indian college students were conducted in Tamil Nadu, South India. In addition, six key informant interviews were conducted in the local border region and nine key informant interviews were conducted in Tamil Nadu, South India.

The fifteen in-depth individual interviews conducted in the local border region occurred over a time period of seven months (March – October 2009). Each interview lasted for about an hour and was conducted in sites chosen by the participants, such as participants’ homes. Most of the female students (n=10) who participated in the in-depth individual interviews were from the

South Indian State of Andhra Pradesh (Table 2). Two individual interview participants were from Tamil Nadu and another two participants were from Karnataka, South India. The age range for these participants was 21-28 years and a majority of these women (n=11) had been living in the El Paso, TX- Las Cruces, NM area for less than a year at the time the interviews were conducted (Table 2). Almost 67% (n=10) of the female individual interview participants reported their partner status as single while 5 students indicated having a boyfriend.

Initially, 10 participants agreed to participate in the female focus group conducted in the El Paso, TX-Las Cruces, NM region. On the day of the focus group, only six participants attended the interview. The focus group lasted about two hours. Five participants were from the State of Andhra Pradesh and one participant was from the State of Kerala, South India (Table 3). All participants migrated to the U.S. for graduate education and five of the six participants had close relatives or family members living in the U.S. All focus group participants shared an apartment with friends. The average time spent by the focus group participants in the local border region was about eleven months (Table 3).

Eight male students attending universities in the El Paso, TX- Las Cruces, NM region agreed to participate in the focus group interview but only five participants showed-up for the interview. This group interview was conducted by a male interviewer and female moderator who were not from India. Two participants had been living in the El Paso, TX-Las Cruces, NM region for two years while two other participants reported eight months and one participant reported six months as their duration of stay in this region (Table 4). All five participants indicated that graduate education was the main reason they migrated to the U.S. from India. The age range for these male participants was 21-24 years.

Twenty-one individual interviews were conducted with female college students who were attending college in a South Indian city (Table 5). The data collection site is a major metropolitan city in the South Indian State of Tamil Nadu. Participants from other Indian States attend college in this city. The age range of participants was 19-26 years with nine participants pursuing their Bachelors, nine participants pursuing their Masters and three participants pursuing their doctoral degrees in the data collection site. The education level of the participants in South India included undergraduate degrees in contrast to the education levels of the U.S. sample that consisted solely of students pursuing graduate degrees given that. Almost all college students from India who pursue higher studies in the U.S. do so only for graduate education. Twelve participants reported that they were living with their families and seven participants indicated that they were living in student dorms. The participants who were residing in student dorms were from other parts of South India. Most participants reported their partner status as single while two participants said that they had boyfriends and three participants reported that they were married.

One focus group interview with ten female Indian students who were attending colleges in a city in South India (five undergraduate, four masters and one doctoral) was conducted in April 2009 (Table 6). All focus group participants had never travelled or lived outside of India. The age range of these participants was 20 to-25 years. Most participants were from the Indian State of Tamil Nadu (three from rural areas) and reported their partner status as single (Table 6). Both participants who were in union reported their partner ethnicity as [Asian] Indian. The average length of residence in the data collection site in South India for the focus group participants was 14 years. Six of the focus group participants were pursuing degrees in non-biological sciences.

One focus group with ten male Indian students attending colleges was conducted in a city in South India in April 2009 (Table 7). The ages of participants ranged from 20 to 25 years and seven participants were pursuing their undergraduate degree and three, their graduate degrees. The average number of years of residence in the data collection site for the focus group participants was about 9.8 years. None of the participants had travelled or lived outside of India prior to the focus group interview. Almost all participants reported their current partner status as single. Most participants were living with their family and a majority were pursuing education in a non-biological field. One participant had moved from Kashmir to attend college in the data collection site while two other participants had relocated from rural areas to urban areas in Tamil Nadu to attend college.

4.3 ANALYSIS AND RESULTS

The data analysis is organized in three major sections according to the 3 specific aims of this research study:

1. To investigate the awareness and specific knowledge of HIV and AIDS among female Indian University students in the U.S.-Mexico border region (El Paso, TX and Las Cruces, NM)
2. To explore perceived individual and community risk of HIV infection among female Indian university students in relation to their initial acculturation process
3. To investigate the interaction between the sending and receiving environment and female Indian university students, and factors which influence their vulnerability, risk and resilience for HIV infection as students, immigrants, and women. The responses collected from individual and group interview participants and the key informants (N=82) are included in each of the following sections depending on the emergent themes addressed and the environment referred to in relation to a particular section/theme. The first two research

questions address data collected from the study participants in the receiving environment (the El Paso, Texas/Las Cruces, New Mexico area). Data collected from both the sending and receiving environments of the study population were analyzed in relation to addressing the third specific aim of the study. The analysis is organized by emergent themes and specific units of discussion per theme for each of the three sections stated above as illustrated in the Data Analysis Map (Table 8).

Section 1: Awareness and specific knowledge of HIV and AIDS among female Indian University students in the U.S.-Mexico border region (El Paso, TX and Las Cruces, NM)

Theme 1: Specific Knowledge of HIV/AIDS

Overall, the individual and focus group interview participants in the El Paso, TX/Las Cruces, NM region seemed to have reasonable knowledge in relation to the causal organism and certain modes of transmission. The responses from the female students participating in individual and group interviews are compared in Table 9. All female participants in individual interviews attending universities in the El Paso, TX/Las Cruces, NM region identified HIV as the human immunodeficiency virus that causes AIDS (Table 9). All participants also had knowledge of at least two modes by which HIV is transmitted. Heterosexual contact was stated by all individual and focus group participants as a mode of transmission.

Infected needles and infected blood and body products such as organ transplants were mentioned as the second major mode of HIV transmission by most individual interview and all focus group participants (Table 9). Most female individual interview participants mentioned infected needles, blood transfusion and organ transplants before they mentioned sexual intercourse as a method of HIV transmission. Eleven of these 13 individual interview participants and all focus group participants who mentioned transmission through blood/infected

needles as a mode of transmission referred to such transmission in relation to hospital procedures. Almost 50% of the individual interview participants indicated that they were not sure about or did not know about intravenous drug use being a risk for HIV transmission.

Sexual contact as a mode of transmission was discussed by the female focus group participants only after probing. One participant said that “illegal sexual contact” can spread HIV and the other five participants agreed. When asked to explain what the participant meant by “illegal sexual contact”, she explained, “ in our [Indian] society, we believe [that] having more than one partner is illegal. Participants were hesitant to mention the word “sex” initially. On probing more about HIV transmission through sexual contact, one focus group participant said that she thinks that there is less chance of HIV spreading through oral sex because she believed that the virus is likely to be destroyed in the gastro-intestinal tract. All female individual and focus group participants in the U.S. referred to vaginal sexual intercourse as sex/sexual contact. Only few female individual interview participants said that they are aware of oral sex and anal sex.

Very few individual interview participants mentioned that HIV can be transmitted through same-sex behaviors while all female focus group participants reported same-sex behaviors as a mode of transmission. Similarly, only two individual interview participants said that they believed that same-sex behaviors do not transmit HIV (Table 9). The probing about same-sex behaviors initiated a discussion about legal and cultural issues pertaining to homosexuality among the female focus group participants in the U.S. One focus group participant brought up the topic of amendment of the ban on homosexuality in India in July, 2009. Following this, two of the focus group participants argued about whether the ban on homosexuality should have been lifted in India. One focus group participant said “It’s against

our culture; What is happening to India? It's accepting everything!" while another responded: "It [homosexuality] is not a disease" and yet another participant said "they [homosexuals] cannot get married, so only option is to legalize. All countries have accepted [homosexuality]...so, why not India?" All focus group participants also said that they believed that homosexual individuals should not be stigmatized. Similarly, all six participants said that an individual could be attracted to the both sexes at the same time.

Five of the 6 key informants from the U.S. currently pursuing their education in the TX/NM region reported having the perception that in general, most South Indian students in their local networks are aware of the specific cause of HIV and main modes of transmission as a result of widely prevalent HIV prevention education efforts in their sending environment (South India). These key informants also said that although HIV is rarely a topic of discussion in the local South Indian student networks, discussing it as a social issue is common. Similarly, all key informants confirmed that the stigma towards homosexuality in India exacerbated by the legal restrictions existing in relation to homosexuality as a result of the British rule seems to affect open discussion about homosexuality within the study population networks in the U.S. Three of the six key informants said that they are aware of same-sex behaviors in their networks but these behaviors will always be hidden owing to the stigma towards such behaviors in the sending environment of the study population even though the receiving environment is more accepting of homosexuality.

All participants in individual and focus group interviews in the U.S. said that there is no cure for HIV/AIDS and that HIV infection can be prevented. About one-third of the individual interview participants and all female focus group participants indicated that medications are

available to prolong the life of an individual infected with HIV (Table 9). All female individual and focus group participants in the U.S. said that HIV infection is preventable (Table 10).

A majority of the individual interview participants in the U.S. reported abstaining from pre-marital sex and practicing safe sex as strategies to prevent HIV infection (Table 10). All female focus group participants in the U.S. site also indicated abstaining from pre-marital sex as a way to prevent HIV. One female individual participant in the U.S. who is a researcher mentioned that it has been difficult to develop a vaccine for HIV due to the characteristics of the evolving glycoprotein coat of the virus.

Most individual interview participants who mentioned safe sex practices as a HIV prevention strategy referred to male condoms. Only two individual interview and one female focus group participant in the U.S. said that they have heard of female condoms. The prevention strategy first mentioned by individual and focus group participants was making sure that only “clean needles” and syringes are used when a person has to undergo medical tests. This was followed by making sure blood transfusion products are not infected and not having sex, in that order (Table 10). Very few individual interview participants mentioned that men could avoid HIV infection by not having sexual contact with female sex workers.

Theme 2: Reported misperceptions and lack of awareness pertaining to HIV/AIDS

The female South Indian college students who participated in individual and focus group interviews in the U.S. reported certain misperceptions pertaining to HIV/AIDS (Table 11). Many participants’ responses also indicated lack of awareness in certain areas related to HIV prevention. Almost all individual interview and focus group interview participants reported not being aware of the availability of female condoms. Fifty percent of the female focus group participants also mentioned male condoms only in relation to birth control as not HIV

prevention. Two of the 15 individual interview participants also mentioned that diaphragms (contraceptives) can prevent HIV infection. All student key informants in the U.S. said that condoms will be generally thought of and used in the study population only as a contraceptive method, owing to the social norm in the sending environment which does not accept pregnancy before marriage.

Most of the individual interview and all focus group participants did not mention injection drug use as a mode of transmission of HIV through infected needles and syringes (Table 11). The participants who mentioned infected needles and syringes as modes of HIV transmission did so only in reference to medical procedures. Ten individual interview participants and 50% of the focus group participants were not informed about HIV transmission in the perinatal period. Most of the individual interview participants in the U.S. who believed that HIV can spread from mother-to-child were not aware of all the phases in the perinatal period during which the infection can be transmitted.

Misperceptions about HIV transmission were reported in relation to at-risk groups for HIV, modes of transmission and sexual orientation (Table 11). Social class, rural or urban residence and levels of formal education were considered as risk factors for transmission of HIV. Almost all female focus group participants and two individual interview participants reported believing that individuals from high socio-economic classes are at high risk for HIV. One individual interview participant attributed risk for HIV among the high social class owing to not conforming to traditional Indian cultural values. In contrast, another participant said that lower social classes, particularly “laborers” were prone to get HIV since they “go with wrong women [sex workers]”. “Probably laborers [can get HIV]... we belong to a different class – financially

more responsible... not a class which goes and has sex with prostitutes, so [we] don't have the risk [for HIV]" - female individual participant in the U.S.

When the U.S. female focus group participants were asked "who can get HIV?", one participant responded "lorry drivers" (truck drivers), five participants said individuals from in the "high class" society, and three others noted that even individuals belonging to the middle socioeconomic class can get HIV depending on their risk behaviors.

All six female focus group participants in the U.S. also said that they believed men who have sex with female sex workers could also contract HIV. In contrast, all male focus group participants from South India living in the U.S. answered that "anybody" can get HIV. Two key informants perceived that such estimations of HIV risk based on socioeconomic class are common among the study population since HIV was reported initially among female sex workers in India. In addition, the sexual mode of transmission and the incurable nature of the disease were said to exacerbate the stigma towards HIV in India. The key informants said that such preconceived notions about HIV affect an individual's perception of vulnerability and risk for HIV.

The possible transmission of HIV infection through food was mentioned by two individual interview participants in the U.S. (Table 11). One female focus group participant in the U.S. reported that the virus will be destroyed by saliva even if consumed. The two individual interview participants who believed that HIV can be transmitted through food explained that individuals may contract HIV while eating in "*chaat*" [snack] shops in India since eating contaminated food prepared by a HIV positive individual may cause HIV. These participants explained that if the HIV infected person preparing the snacks has wounds on his/her hands then the virus can be passed onto others through food. It should be noted that this mode of

transmission through food was also discussed by individual and focus group interview participants who participated in South India. Nine of the ten female focus group participants in South India said that it may be possible for HIV to spread through ingestion of contaminated food. Their perceptions pertaining to HIV transmission is discussed in Section 3 of this chapter.

One particular incident which was mentioned in relation to HIV transmission by three female focus group and five individual interview participants in the U.S. shed light on the highly prevalent belief about intentional spread of HIV by infected individuals (Table 11). These participants explained that an e-mail was circulated about how HIV positive individuals purposefully plant infected needles in public places such as movie theatres, bus-seats etc. in order to infect other individuals. The participants who mentioned this incident spoke about it when they were asked the possible routes of HIV transmission and their individual risk for HIV. All key informants in the U.S. were also aware of this e-mail message which circulated in the sending and receiving environments of the study population.

Misperceptions about HIV transmission pertaining to same-sex behaviors prevailed among some female individual interview participants in the U.S. Two who said that they were aware of what same-sex behaviors (gay and lesbian) mean said that same-sex behaviors. Two individual interview participants indicated that they did not know much about same-sex behaviors. One seemed initially offended when asked about same-sex behaviors and said that this was not topic related to the individual interview! She continued the interview only after the context of HIV in terms of same-sex behaviors and the reason for asking these questions was explained to her. It is worthwhile noting here that this female individual interview participant was from an urban environment in India, currently in a relationship and used to socializing with friends at pubs while in India. Seven individual interview participants said that they believe an

individual can only be heterosexual or homosexual and thus, not bisexual. This information should be examined in relation to the prevailing HIV risk cited in literature for Indian women who are married to MSM as a result of social stigma to homosexuality (Go et al., 2004).

Theme 3: Socio-cultural norms relevant to dissemination of knowledge / awareness of HIV/AIDS

Certain socio-cultural norms in India were discussed by individual and female focus group participants could influence the vulnerability and risk of the study population to HIV (Table 12). These norms seem to be based on the stigma to HIV, sexual taboo, and gender roles prevalent in India and were related to information sharing about HIV.

All individual and focus group participants in the U.S. said that they rarely discussed HIV/AIDS with their friends or families. Eleven individual interview participants and three female focus group participants said that when they did discuss HIV/AIDS with their friends, it was only as a social issue (Table 12). These participants said that such discussions were frequently based on the stigma to HIV/AIDS in India and/or their sympathy for HIV positive individuals.

Fifty percent of the female focus group participants in the U.S. said that if they ever did discuss HIV it was only as a social issue when they “watch a movie with HIV” or hear news related to HIV: “we feel sorry for them [HIV infected individuals]”. All five male focus group participants in the U.S. also said that they do not discuss HIV with their friends and if they do rarely, only as a social topic given the high incidence of HIV in India. Such dearth in discussing HIV/AIDS as a topic with friends could be related to participants’ perceptions about social norms pertaining to openly discussing sex, sexuality and related topics such as HIV/AIDS.

“Here [in the U.S.] we never talk about HIV/AIDS... even if we talk, it is a social issue- why people are going to prostitutes?...about HIV in India; 2.5 million people have HIV in India; never relate it to ourselves; because our families-no chance [of HIV]!” – Female individual interview participant in the U.S.

“In India, if a woman openly discussed [sex and HIV], they will think she is very interested in having sex...it definitely affects her life” – Female Indian interview participant in the U.S.

As Table 12 indicates, most individual interview and all focus group participants in the U.S. explained that it was not expected or acceptable for a woman in/from India to talk openly about sex, sexuality or HIV/AIDS while two individual interview participants said that it is acceptable for a woman to talk about sex, sexuality and HIV/AIDS openly in India if she is a health professional and discusses these issues as part of her professional duties. Eleven women who indicated that even if they speak about sexuality and STIs, the discussion would usually be with their girl friends, sisters or cousins rather than with men they know.

Almost all individual interview participants in the U.S. also indicated that an Indian woman talking openly about sex and HIV would be termed a “loose talker” or “not a good girl” (Table 12). These students reported that a woman talking openly about sex would imply that she is interested in sex and/or that she has already experienced sexual intercourse. A majority of the individual interview participants also said that the elders in an Indian family would not accept a woman talking openly about sex and HIV.

“A woman could know about HIV but should not talk about it [in India]”- female individual interview participant in the U.S.

All key informants conveyed similar perceptions about a South Indian woman openly discussing HIV, sex and sexuality. These key informants indicated that it is acceptable for women to discuss these topics as a scientific topic among themselves or as part of participation in health education programs/camps and similar venues but not as a topic of discussion with neither elders nor men. The key informants did mention that HIV is discussed in their local networks in response to media reports about HIV/AIDS in India.

Discussing sex openly seemed to have different implications depending on a woman's marital status. Thirteen individual interview participants in the U.S. explained that an unmarried Indian woman who speaks openly about sexuality and STIs could adversely affect her future marital prospects. Most individual interview and six focus group participants said that according to Indian culture and society, it is acceptable for married women to discuss sex with their husbands but they should not be the ones to initiate the discussion (Table 12). Many individual interview participants also indicated that a woman initiating the topic of sex with the man before or after marriage may lead to doubts regarding her virginity or possible premarital sexual relationships.

“Why is she talking like this?” “In [Indian] society, she [a woman] should not know or talk about sex; ideally a man should know more about sex at the time of marriage... they are brought up like that; don't know why it's ok for a man” - Female study participants in the U.S.

All female individual interview participants in the U.S. appeared to generally perceive that in general women in India do not discuss STIs such as HIV/AIDS (Table 12). All female participants in the U.S. said that most persons in India recognize that the primary mode of transmission of HIV is sexual contact, especially that involving heterosexual relations. Given the taboos towards speaking openly about sex and engaging in pre-marital sex plus the high

value placed on pre-marital virginity for Indian women, all female participants concurred that women would be very hesitant discuss avoiding STIs through safe sex practices. Incidentally, all male South Indian students who participated in the focus group in the U.S. said that they “treat them [Indian women in the U.S.] same way like in India – we respect them”. This notion of “respect” must be examined in relation to expectations from Indian women to demonstrate knowledge of HIV/AIDS.

One key informant in the U.S. said that if a female student in their social network discussed sexual topics openly, then other students, particularly the males in their network would have negative impression about her. In addition, if she socializes with men (Indian or non-Indian), there would be a negative impression about her within the local Indian student network. Another key informant reported believing that students from North India are exposed to a more liberal culture in their sending environment compared to those students from South India. The informant also noted that this difference may cause the variations in perceptions about a female Indian student’s behavior while in the U.S.

Section 2: Perceived individual and community risk of HIV infection among female Indian university students in relation to their initial acculturation process

Theme 1: Participant reported perceptions of risk behaviors in study population

Most participants in the U.S. reported prevalence of HIV risk behaviors within the study population (Table 13). These behaviors include alcohol and drug use including prescription drug use and unsafe sex practices. All individual interview and female focus group participants in the U.S. reported that alcohol is frequently consumed among Indian college students in the U.S. while eleven individual interview participants reported alcohol consumption by female students. One-quarter individual interview participants and fifty percent of the female focus group

participants reported higher prevalence of alcohol consumption among male Indian college students compared to females (Table 13). The most popular type of alcoholic beverage reported for male students was beer and for female students was vodka.

Many individual interview participants in the U.S. reported that “pubbing” is a popular activity among college students in India. All female focus group participants in the U.S. initially said that South Indian female students do not consume alcohol in the U.S., only male students do so. However, upon further probing, one participant said that alcohol consumption varies by individual. Most of the five male focus group participants in the U.S. concurred that alcohol use was common at student parties and that it may be a risk behavior for HIV among this population.

All women who participated in individual interviews in the U.S.-Mexico border region said that alcohol is often consumed at mixed male-female student parties in the U.S. and at male-only social events. Few female individual interview participants mentioned that the female students who drink alcohol tend to stay longer at parties after most of the students leave and then consume alcohol with the male students. One-third of the individual interview participants in the U.S. mentioned that some female students from India who have not previously consumed alcohol in India do so at student parties for the purposes of “trying it out” or “experimenting”.

All individual interview and female focus group participants in the U.S. believed that alcohol can negatively affect behavior and decision making including sexual decision making. Two-thirds of the individual interview participants in the U.S. said that alcohol consumption can lead to both forced and consensual sexual encounters. Several also noted that most forced sexual encounters will not be usually reported by female Indian students. Some participants said that they believed that forced sexual acts are more likely to be reported by female Indian students while in the U.S. than in India due to differences in social attitudes and legal resources available

for recourse. One female participant mentioned that peer pressure to consume alcohol among female Indian students caused issues with living arrangements for her roommate group. Two female focus group members living in the U.S. said that they plan to avoid close friendships with Indian female students who consume alcohol.

Five key informants in the U.S. study sample were in general agreement with the views reported by the female in-depth interviewees. They noted that alcohol use is common among male Indian students. According to one key informant, social networks are frequently formed based on alcohol use, at least for the purpose of socializing outside of the university. Female students who consume alcohol while in the U.S. were identified as individuals who were accustomed to “pubbing” while in India according to three key informants living in the U.S. One key informant in the U.S. also reported that most Indian female students who consume alcohol are more likely to be from metropolitan cities in India. Three key informants in the U.S. indicated that the women in their networks (South Indian) may consume alcohol in small amounts just to “try it out”. One female key informant said that alcohol consumption by a woman in the local Indian student network is negatively viewed also in terms of her overall conduct because of the societal and cultural expectations placed on Indian women. Two key informants said that being in America does not necessarily change the misperceptions among Indian men about Indian women who consume alcohol even if these men may socialize with these women.

As Table 13 indicates, drug use was reported as commonplace among college students, including those from India, by many women who participated in individual and group interviews in the U.S. A couple of female focus group participants said that they have heard reports of drug use among male students from India. The specific drugs mentioned were “weed”, “marijuana”

and “pills”. One female student reported that she was offered some pills “to feel good” by a non-Indian student in the U.S. Participants reported that drug use appears to be more prevalent among male Indian students in the border region. When questions were posed regarding prescription drug use, only one student mentioned use of over the counter cough syrups as a sleep aid (Table 13).

The potential for risky sex behaviors was discussed among individual and focus group participants in relation to dating, use of condoms and same-sex behaviors in the study population (Table 13). Fourteen individual interview participants and two female focus group participants in the U.S. mentioned that dating was prevalent among Indian college students in their networks. Dating was most frequently defined as “going out and getting to know the person”. About 50% of the female individual interview participants in the U.S. (n= 8) reported that female Indian students mostly date male Indian students while male Indian students date both Indian and other ethnicity female students.

Almost all individual interview participants and two female focus group participants said that dating can involve sex. Eight individual interview participants in the U.S. reported that they believe that it is more likely for “dating” to result in sexual relations when it involves a person from another ethnic group particularly in case of females, since the Indian culture has different standards for Indian women versus men. The participants of the female focus group in the U.S. were initially uncomfortable in discussing dating. Five of the six participants said that there is “not much dating” in their networks. Subsequently, two of these participants admitted to being aware of live-in relationships among fellow-Indian students.

The male focus group participants in the U.S. said that dating was “rare” but more probing revealed that they used the term dating to mean sex. One male focus group participant in

the U.S. however, indicated after the interview that Indian students in his network do frequently date women from their own and other ethnicities. This participant indicated that he did not want to oppose the group opinions expressed during the focus group interview since he belonged to the same social network.

Most individual and focus group interview participants in the U.S. discussed dating as inappropriate because it may involve sex. Most female students who participated in individual interviews in the U.S. mentioned that social dating differs from a relationship with respect to time involved and inter-personal commitment between persons involved. They also explained that while relationships more frequently end in marriage compared to dating, both can involve sex. Many female individual interview participants in the U.S. said that most of such sexual encounters are unplanned.

Perceptions about condom use during sexual intercourse before marriage in this student population were divided; while five participants felt that condom use is not prevalent during premarital sex due to the unplanned nature of the event and lack of awareness, 11 individual interview participants insisted that some form of contraception, if not condoms, would be used during dating/premarital sexual encounters because of the need to prevent pregnancy.

Two female students who participated in individual interviews in the U.S. mentioned that they were living together with their boyfriends who happen to be Indian students. Ten individual interview participants mentioned prevalence of live-in relationships among Indian students in the U.S. and that most of these students are likely get married in future.

Three individual interview participants reported that same-sex relations may be prevalent in the study population (Table 13). These three participants said that is any Indian college student

in their social network is engaged in same-sex behavior, the fact that they are gay or lesbian would not be made known to others in the network owing to fear of stigmatization.

Theme 2: HIV risk in relation to sending and receiving environment

Table 14 indicates that the female study participants in the U.S. differed regarding their opinions about the level of risk for HIV in relation to the sending and receiving environments. Several individual interview and female focus group participants living in the U.S. said that HIV risk for a college student is elevated in India compared to the U.S. Two individual participants attributed this higher level of risk to the lack of awareness about HIV/AIDS among college students in India. Two students said that the Indian socio-cultural norms prevent discussion about HIV and can increase the risk for HIV for students in India. Three female focus group students reported that the stresses of college life in India can elevate the HIV risk of students.

“HIV risk is more in India; I've heard that boys like to have sex without condoms; so if the girls don't resist him, then she can get; it would be difficult to start the contraception topic first even if they know-so risk is high there”

Many individual interview participants and female focus group participants in the U.S. discussed that they believe HIV risk for Indian students is higher when they are pursuing education in the U.S. (Table 14). Several individual interview and all female focus group participants explained that the “freedom” which comes from being away from home and family in India may increase a person’s chance to engage in risk behaviors. Five individual interview participants said that conservative and “suppressed” students from India are often lured to experiment with alcohol, drugs and sex in the U.S. which can increase their HIV risk. It was also reported that the combination of already having engaged in HIV risk behaviors in India, different social expectations of Indian men pertaining to sex and, the increased opportunity to engage in

risky behaviors in an environment away from home are responsible for the higher HIV risk in the U.S.

“The chances are more here; same guy in India would not have a girlfriend; here nobody asks; it’s part of fun”

“It depends on case by case; chance is lower in India: because here, they have lesser control from family, parents; they might have more than 1 sexual partner”

Three individual interview participants in the U.S. said that the chance of HIV infection for Indian college students is equal whether they are in India or the U.S. since risk depends on individual beliefs about what is risky and what is not.

“Risk of HIV is same in both places; for me, my principles help me”

Theme 3: Socio-structural class and HIV risk

Social class, caste and “family background” were mentioned a number of times with respect to HIV risk by individual and focus group interview participants in the U.S. (Table 15). Some individual interview participants and female focus group participants linked social class to HIV risk. Two individual interview participants suggested that HIV risk was higher among students from the two extremes of social class compared to those in the middle. They suggested that the waning of traditional Indian values was an important reason for the increasing frequency of risky behaviors among the Indian upper class. One subject reported that illiteracy or inadequate formal education and lack of awareness about HIV/HIV prevention strategies increased the risk of lower social class Indians. One participant also mentioned class in connection with increased HIV risk among rural residents. A couple of female focus group participants mentioned that HIV risk may be high for Indian students from all socioeconomic classes owing to “mixing” of classes in colleges/social networks.

A number of participants from the individual interviews and female focus group in the U.S. believed that a good family background decreases one's risk for HIV: "If parents are good, kids are good". When asked what "good family background" means, participants said education, financial status, status of the family in Indian society, caste, family occupation, whether the prospective groom has had any affairs, and if there are any divorces in the family are examined in terms of a "good family background" (Table 15). Three individual interview participants did not have a response for this query. Seven individual interview participants said that they personally do not believe that a "good family background" may mean less risk for HIV.

Caste was mentioned as an important consideration with reference to marriages among Indian students. All individual interviews in the U.S. mentioned that caste was not a significant issue in dating but is considered more important for relationships and/or marriage. All female individual interview and female focus group participants in the U.S. said that in arranged marriages, the deciding factor for choosing a groom or bride is "good family background".

In contrast to their previously mentioned responses with respect to their beliefs about a good family background not being related to lower HIV risk, a number of individual interview participants reported that they are planning to have an arranged marriage in future and that their parents would make sure that the prospective groom is from a "good family background". When probed about why even though they believe that a good family background doesn't relate to less or no HIV risk, they would agree to a marriage based on that, four women said they have not thought about their risk for HIV in terms of marriage, nine women said they do trust their parents, and two women said that they may ask for a HIV test before marriage.

Theme 4: Marriage and HIV risk

A majority of individual interviews and all female focus group participants in the border region concurred that a married woman who has sex only with her husband still can get HIV infection (Table 16). Close to half of the individual interview participants explained that a married woman can get HIV if her husband is HIV positive. Six individual interview participants mentioned heterosexual contact as a possible mode for spousal infection only in the context of the husband having pre-marital sexual relationships. Several female focus group participants indicated that a married woman can acquire HIV if her husband has engaged in extra-marital sexual affairs. They linked this risk behavior to SES as discussed in the previous theme. Five individual interview participants said that a married woman who has extra-marital affairs can be at risk for HIV (Table 16).

None of the individual or group interview participants in the border region mentioned same-sex contact as a possible reason for a husband acquiring HIV infection.

HIV risk with respect to practicing safe sex in a marriage was discussed by individual and female focus group participants (Table 16). Eleven individual interview and all six female focus group participants in the U.S. reported that the use of contraception is acceptable after marriage according to Indian socio-cultural norms. However, all of the individual interview participants indicated that the husband should initiate the discussion about contraception. Most participants in the U.S. said that a woman can discuss contraception after marriage but she should not initiate the conversation about this (Table 16). Half of the individual interview participants said that marital problems can develop if a married woman insists on using condoms for protection against STIs (even if the husband is having extra-marital affairs). All individual

interview and female focus group participants in the U.S. said that pre-and extra-marital affairs are forgiven for Indian men when compared to women (Table 16).

Theme 5: Knowledge, access and utilization of HIV testing

Table 17 displays the results of the analysis indicating that HIV testing was discussed with respect to access and utilization, particularly in terms of pre-marital testing. All individual and female focus group interview participants in the U.S. concurred that HIV testing is a generally good idea for everyone, whether in India or the U.S. They also indicated that pre-marital HIV testing would be especially beneficial to reduce HIV risk among college students and other Indian women including female college students. However, they differed as to their perceptions about when pre-marital HIV testing should be performed (i.e., love versus arranged marriages). Most individual interview and all female focus group participants said that pre-marital HIV testing is needed in both love and arranged marriages. However, several individual interview participants said that pre-marital HIV testing may not be necessary in love marriages (Table 17).

As Table 17 indicates, all U.S. individual and focus group participants reported that access to HIV testing is definitely better in the U.S. compared to India. However, all but one of these participants said that a male or female Indian college student may hesitate to get tested for HIV in the U.S. due to the potentially serious social ramifications should their test results become known to other Indian students. They explained that if it becomes known that an Indian student went for a HIV test or plans to take a HIV test, rumors would start about him or her with the result being partial or complete social isolation of the student (Table 17).

The key informants in the U.S. expressed similar views in relation to an Indian student getting locally tested for HIV. One key informant mentioned that the local student network may

actually help and/or provide support to an Indian student who gets tested for HIV, regardless of the test results, after the initial wave of rumors subside about the student. More than half of the individual interview participants and all female focus group participants said that they will provide support for a friend who plans to take a HIV test.

Theme 6: Perception of individual risk for HIV

Participants' perception of individual risk differed with respect to their opinions about risk for HIV in their social networks. Most female participants living in the local border region did not report perceiving they were at risk for HIV during the interview (Table 18). They explained that they are not at risk for HIV risk because they do not engage in risky behaviors. On further probing, all of the female focus group participants said that they could possibly be at risk for HIV through contaminated blood transfusions, body piercing using unsterile needles or even mosquito bites (if a possible route of transmission), but "sexually? Never!" However, many individual interview participants admitted that they may be at risk for HIV in future as a result of getting married. These participants reported this possibility but only after the interview concluded.

Most individual interview participants reported that they had not considered pre-marital HIV testing prior to the interview. Among the fourteen individual interview participants living in the U.S. who said that they could be at risk for HIV through marriage, only four said that they will ask their future partner to take the HIV test before marriage as a result of taking part in this study (Table 18). However, two of the four women said that they will go ahead with the marriage even if their future partners refuse to take a pre-marital HIV test.

Table 18 indicates that most of the study participants in the U.S. said that they plan to have arranged marriages in future. A majority of the individual interview participants and all the

female focus group participants explained that HIV testing is not generally an issue which is considered or discussed when Indian marriages are arranged (Table 18). Most individual participants and all female focus group participants said that even if they ask for a pre-marital HIV test, their parents and future parents-in-law will not probably agree to it. Trust in their future husband and trust that their parents will find a groom who does not engage in risky behaviors were the reasons they cited for not planning to ask for a pre-marital HIV test.

“Probably groom's parents will be upset because you are doubting their son-same reaction in the girls side... they [groom's parents] don't think this is done for their good-they think it is a family honor issue; this [HIV testing] is not a even a topic in arranged marriage” – quote from individual interview participant in the U.S.

When these women were asked to describe their feelings about realizing that they may be unable to ask for a pre-marital HIV test even if they may be at risk through marriage, participants said it is “sad”, depressing” and it’s “fate”. All participants said that they do not have any personal objections against taking the pre-marital HIV test but that their parents and their Indian social networks will view it negatively.

“It says there is no trust [in the partner] if you ask for [the HIV] test; the typical Indian women completely takes him [husband] for granted-that he is very pure. If he cheats, many [married women] take it as their fate, these days few get divorced. Financial dependence doesn't influence [a woman's decision to ask for a HIV test]; I didn't ask-laugh - bride asking [the groom to be tested for HIV] is very rare; brides' parents are under obedience side; they have lesser power however educated the bride is; Asking for a HIV test is degrading to the groom.” – quote from individual interview participant in the U.S.

The emergent themes in this section indicate that the study participants in the U.S. may perceive community vulnerability and risk for HIV in terms of the general Indian student population both in the U.S. and India. However, they may also not perceive the same level of vulnerability to HIV for their immediate social network of friends who are South Indian college students.

Similarly, these women seem to be considering HIV risk only in terms of their current stage in life and not future risk for HIV. This exclusive focus on their present may be one of the reasons for not perceiving future risk for HIV. Their own perceived resilience to HIV due to the lack of individual risk behaviors may also prevent them from perceiving their HIV risk resulting from external factors not under their control. On the other hand, participants who did perceive HIV risk through marriage indicated that they were not equipped to take any action in order to reduce this risk. In general, the study participants in the U.S. attributed community and individual risk for HIV to multiple contexts such as environment, class, caste, and socio-cultural norms pertaining to gender roles in their sending and receiving environment.

Section 3: The interactions between the sending and receiving environment of study participants which influence their vulnerability, risk and resilience for HIV infection as students, immigrants, and women.

Theme 1: Potential interactions between norms in sending and receiving environment in relation to HIV risk and resilience

The responses of female college students from the sending and receiving environment indicate that there are shared similarities in certain norms or factors related to HIV risk between both environments. Participants' responses also suggest that these norms or factors in the sending

environment could interact with the same in the receiving environment to shape the study population's risk and resilience for HIV.

As Table 19 shows, education, employment and marriage (particularly for women) were cited as main venues for migration from Indian to the U.S. by most participants from South India and the U.S.-Mexico border region. The male key informant who recruits students from South India for international universities confirmed that many Indian students travel abroad for graduate education. He also said that students from rural and urban areas in South India usually preferred to go to the U.S., Canada or U.K. for higher education. A more recent trend described is for students from India to pursue medical education in Russia and after graduation, return to practice in India.

The male focus group participants in South India and the U.S. reported that arranged marriages are common among male South Indian students who attend colleges in the U.S. These focus group participants stated that this may be an additional reason for more Indian women migrating to the U.S. as a result of marriage.

The female individual interview participants living in the U.S. reported that they decided to pursue education in the U.S. due to the higher quality of education they perceived as present in the U.S. (n=3) and lack of better employment opportunities in India after completing their undergraduate degree (n=6).

Social activities of the study participants in both environments were reported to mainly include going out to malls, restaurants, and movies with fellow college students (male and female). Student-organized parties organized were cited as social activities by more students in the U.S. compared to those living in South India. Two students in the U.S. mentioned that they take long road trips out of Texas or New Mexico with friends in their personal vehicles. These

students own cars. These socializing activities were also mentioned by most of the male focus group participants and key informants residing in the U.S.

Student parties which involved alcohol appear to be part of socializing. Several key informants and individual interview participants reported that male Indian students frequent local strip clubs in the El Paso, TX/Las Cruces, NM area as part of socializing. It also was reported that strip clubs often serve as venues where contacts are made for sexual activities.

As Table 19 indicates, most female participants in South India reported that they lived with their families while a majority of the female participants in the U.S. share an apartment with friends. Several women from South India who reported that they live with their fellow-students said that they were staying in student dorms or “hostels”. Two women in the U.S. reported that they were living with their boyfriends.

The lower cost of living in comparison to other parts of the U.S., increased student internships and assistantship opportunities available and the warm climate which resembles the climate in South India were reasons cited for choosing to migrate to the local border region in the U.S. by many individual interview and female focus group participants in the U.S. (Table 20). All female participants in the U.S. said that their social networks are comprised of male and female students from India and other countries/ethnicities. As Table 20 shows, most of these individual interview participants indicated that they attend student parties with students from different ethnic groups and other countries. Almost all female focus group participants said that they regularly attend parties organized for exclusively for Indian students.

Table 20 also indicates that a majority of the female participants in the U.S. reported using the an Indian social networking site (“Orkut”) to investigate higher education opportunities in the U.S. and establish contact with members of the Indian Students Associations (ISA) at

various U.S. universities. All female participants in the U.S. said that they had contacted the local ISA prior to arriving in the border region. The ISA's frequently arrange for temporary lodging for these students for the first two weeks. Nine individual interview and three female focus group participants in the U.S. reported that they met other fellow female students in India prior to coming to the local border region. They said that these meetings are common practice and frequently include the families of female students. Such contacts with fellow-students who are going to attend the same university in the U.S. are made through "Orkut".

All female students mentioned that students from the same region/state in South India planning to pursue higher education in the U.S. frequently contact each other once they get admitted into U.S. universities. The students usually continue their interactions with other students from their region/state who have been admitted to the same university they will be attending in the U.S. Many participants also mentioned that this helps in establishing a network for their families in India and is helpful in passing on information and goods to and from the U.S. Most of the female participants in the U.S. said that students from India often travel together when they first arrive in the U.S.

Table 21 indicates that the reported perceptions about the socio-cultural norms relating to sex and sexuality in the sending environment mirrored those reported by female study participants in the receiving environment. All female and male study participants in the South India and the U.S. said that dating and pre-marital sex is not acceptable in the Indian society. However, all female participants in both sites mentioned that different standards exist for men and women regarding the consequences of pre-marital sex. Men who engage in pre-marital sex are not socially ostracized but women are. All female individual interview participants in the U.S. also reported that the same standards pertaining to pre-marital sex exist among the Indian

student network in the El Paso, TX and Las Cruces, NM region. These women explained that there would be “talks” and “rumors” among the local Indian student network about a female Indian student who consumes alcohol, talks freely, or goes out with many men, has a live in relationship, and/or dates. One key informant in the U.S. recalled a discussion he had with two male Indian students in the U.S. One male Indian student told the key informant that if he has a chance to have sex in a pre-marital relationship in the U.S. he would while the other student indicated that he prefers to engage in sex only after marriage.

Except for a small handful of individual interview participants in the U.S., all other female participants living in South India or the U.S. said that pre-marital sex is prevalent among Indian college students in their environment. Except for a few individual interview participants, those in the U.S. said that they personally believe that pre-marital sex is wrong (Table 21). At least fifty percent of these participants feel that it is should be each woman’s personal choice whether or not to engage in pre-marital sex. Many participants attributed the contrasts between Indian socio-cultural norms and actual behaviors related to sex and sexuality to Indian gender roles. Participants in South India and the U.S. suggested that the expectations placed upon Indian women by culture, tradition, and society can prevent women from being informed about their HIV risk and acting accordingly to reduce it (Table 22).

All female participants in South India and most female participants in the U.S. said that according to Indian social expectations, women should not demonstrate her knowledge of sex and contraception before marriage since such public demonstration can negatively affect her marriage prospects (Table 22). This perception may explain why “sex” was often referred to as “it”, “wrong thing”, “crap”, “this”, “activities”, “malpractices”, “unhygienic practices”, “wrong practices” etc. by most female participants in both South India and the U.S. On the other hand,

the male focus group participants in the U.S. and in South India mentioned the word “sex” more often than the female participants even though they initially referred to sex as “dating” and “wrong practices”. All female participants in both study environments stressed that marriage is very important for an Indian woman in order to be respected by Indian society. All female participants in South India and the U.S. said that in general, only a man should initiate the discussion about sex, contraception and/or HIV/AIDS before marriage. One individual interview participant in the U.S. explained that Indian parents often caution their daughters not to talk about sex before her husband starts the conversation.

“She [an Indian woman] should show that she has an idea about sex but not give the idea that she knows everything about it; the man should know more about sex; its socially thought that its better for women not to know about sex more than men-in all classes [in India]”

As shown in Table 22, many participants in South India and the U.S. said that although a woman can discuss sex, contraception or HIV/AIDS after marriage with her husband, initiating the discussion can lead to mistrust in the marriage. All female participants in South India and the U.S. strongly stressed that pregnancy before marriage is highly stigmatized in the Indian society. As the table also indicates, many female participants living in South Indian as well as the U.S. reported that some form of contraception but not necessarily condoms is utilized during pre-marital sex among Indian college students. However, several individual interview participants residing in the U.S. disagreed with this observation noting that most such sexual relations are unplanned. Several female individual interview participants in South India and in the U.S. said that if an Indian girl becomes pregnant before marriage, the pregnancy is almost always therapeutically terminated. One female student in South India said that her friends/fellow college

students who had unplanned pregnancies before marriage had terminated these by the end of the first trimester.

“Pregnancy before marriage is a crime, especially for a girl” – Quote from female participant in the U.S.

“They [Indian women who get pregnant before marriage] never, never have the babies [give birth] because it is always the girl who gets questioned...they will be completely cut off from the society” - Quote from female participant in South India.

The responses from the female college students living in both environments suggest that such socio-cultural norms and gender roles may affect the use of HIV testing services, even if they are widely available (Table 23). All female participants in South India and the U.S. reported that sex taboos and HIV/AIDS stigma in Indian society act to prevent college students in India or the U.S. to go for testing. All female participants living in both study sites emphasized that taking an HIV test can have a negative effect on an Indian female college student’s chances of getting married. Except for one individual U.S. interview participant, all female participants in South India and the U.S. said that fear of possible social ramifications within the local Indian student community can prevent an Indian college student in the U.S. from being tested for HIV (Table 23).

A majority of the female participants in South India and the U.S. reported various barriers to college students and their parents gaining awareness about HIV/AIDS (Table 24). All female participants in the U.S. and twenty-two female participants in South India reported that that low awareness of individual risk for HIV/AIDS maybe due to the inhibition in discussing HIV within their social networks. Most female participants in both sites also said that Indian parents rarely have discussion about sex, sexuality and HIV/AIDS with their school and college-going children.

“In India, parents don't talk about crap [sex].

More often it is the older siblings, friends, cousins or relatives (aunt) who talks about sex. Female individual interview participants in the U.S. and South India reported that such conversations are usually based on explanations about menarche and avoidance of premarital sex. One female individual interview participant in the U.S. said that even though her parents knew that she used to socialize in pubs with male and female friends in India, her mother never discussed sex and other risk behaviors with her: “she [my mother] trusts me”.

Another female participant explained that according to Indian parents, questions from their children about sex or HIV/AIDS is a “bad sign” since it may mean that their child is interested in or engaging in sex. Another participant recalled that when she heard about fellow college students terminating unintended pregnancies, she went to her father to discuss about the issue but he told her that, “this is not something you discuss with your dad”. This student’s mother is deceased. To summarize, the female participants said that Indian parents expect their children not to have sex before marriage and thus believe that it is unnecessary to discuss the issue. Most individual participants in both South India and the U.S. said that Indian often do not believe that their children can be at risk for HIV and/or that their children can engage in risk behaviors, particularly sex. Several female focus group participants in South India and one female from the U.S. noted that Indian parents may be conflicted with respect to believing that their children may be at risk for HIV because it discredits the notion that they instilled good values in their children as part of parenting.

The two key informants from India who are parents of college students indicated that they spoke to their children about sex in “general terms” about “good touch, bad touch” (parent of female student) and about the necessity to “respect girls” (parent of a male college student).

These key informants said that such talk referred to avoiding pre-marital sex as opposed to reducing the risk for HIV or other STIs. Both parents indicated that they expected their children to not engage in sex before marriage and that they perceived that their children learned about HIV/AIDS from health education messages through media and their colleges.

Many female interview participants also discussed what could be the probable ways in which they could convince their parents/future groom/parents-in-laws to agree for the groom to have an HIV test when the marriage is arranged. Most female focus group participants also asked the interviewer to make sure to tell the “boys” who are participating in the study about several topics. These include the absence of a conclusive test for establishing a girl’s virginity, the benefits of HIV testing before marriage, and the barriers faced by women like themselves in asking for the HIV test at the time of marriage.

As Table 24 shows, many female participants in South India and the U.S. suggested that most Indian college students gain information about HIV/AIDS through the Internet. Most of these participants said that if health messages about HIV prevention and safe sex appear on the television when an Indian family is watching, parents change the television channel so as to avoid watching the messages. Participants attributed this to the taboo on discussing issues related to sex in the Indian society.

Table 24 also shows that many individual interview and female focus group participants in South India and most female participants in the U.S. said that they and their friends rarely read the pamphlets about HIV/AIDS prevention that are available in college campuses/student health centers. Many male and female study participants in South India and the U.S requested clarifications regarding sexual transmission of HIV, contraception, test for virginity and same-sex behaviors from the PI after the interviews concluded. In particular, participants wanted to

know if there is a “test” for establishing the virginity of a woman, the types of contraceptive devices available, and the need for pre-marital HIV testing.

An interactive seminar with college students, ideally as a part of a class session, was suggested by participants in both South India and the U.S. as the most effective way to provide information about HIV/AIDS to college students. These participants explained that an interactive seminar would not be “boring” like a lecture, would provide opportunities for students to ask questions and will be well attended if it is mandatory as part of the class. In addition, such a session in class would ensure that even individuals who may be hesitant to actively seek HIV/AIDS information.

Theme 2: Reported Risk behaviors among participants’ networks in sending and receiving environments

Study participants in South India and the U.S. reported being aware of high-risk behaviors among the college students in their immediate social networks. All female participants in both sites indicated that alcohol is used within their networks (Table 25). Pubbing was reported by most participants in South India. Vodka was reported as the most popular drink among female college students.

The Indian key informant who is a frequent pub visitor said that she has observed a substantial increase in the number of college students visiting pubs in major Indian cities during the past 5 years. This key informant also pursued her college education in South India and said she has been visiting pubs for the past 10 years. She observed that many college students who visited these seem to be underage or “minors” according to local laws. The informant also indicated that the backgrounds of the students who visit pubs are diverse with respect to urbanity and SES. She also reported based on her observations, alcohol consumption in pubs increases the

opportunity for unplanned sex. She noted that condom access was low in South India and that it might help to reduce HIV risk if pubs made condoms available discreetly. However, since most sexual encounters are not planned and/or occur as result of alcohol intoxication she concluded that a female college student may not have the power to negotiate condom use, intoxicated or not.

The street names of drugs reported varied by study site. Participants in South India reported “*ganja*” [opium], heroin, brown sugar [heroin], abin and dope. Participants in the U.S. reported “weed” [marijuana], and “pills”. The abuse of over-the counter cough medicine was reported as quite common among college students by some female participants in South India and the U.S. The key informant who is a college professor in South India reported a high prevalence of drug use and alcohol use among college students in South India. She also noted that parties hosted by students in venues outside of their home provide opportunities for college students from all classes to mingle. She said that the notion that only high socio-economic class or low-socioeconomic class members engage in risky behaviors may not be valid owing to the multiple contexts (parties, pubs, colleges) in which all classes mingle.

Table 25 shows that many female participants in South India and in the U.S. said that dating may involve sexual relations but most of these indicated that condoms may not always be used in such relations. The participants explained that birth control is the primary and often only reason for using protection during pre-marital sex and hence any form of contraception may be used. Five female participants in South India believed that condoms will definitely not be used during such sexual encounters due to the often unplanned nature of the event.

All male focus group participants in South India agreed that dating often involves sex and believed that some form of birth control will be utilized but not necessarily condoms. Most male

focus group participants residing in the U.S. said that dating is “absolutely nil” in South India and is “rare” among South Indian students in the U.S. These male students referred to having sexual relations as dating.

The two key informants who are parents of college students in India said that their children do not date but they are aware of the increased frequency of dating among college students in South India. These informants said that they think dating often involves sex. They also attributed dating more to individuals from the high socio-economic class and/or college students from other countries pursuing education in India. The parent of the female college student said that she will not approve of her daughter dating and does not expect her daughter to do so. The parent of the male college student said that her son is not “interested” in dating and only considers girls/fellow female college students as “friends”. Interestingly, both key informants perceived condoms to be effective against HIV prevention. All key informants in the U.S. also indicated that if dating involves sex, then some form of birth control will be used, but not necessarily condoms.

All participants in both study environments who said that they were aware of same-sex behaviors in their networks said that these remain hidden owing to Indian norms stigmatizing such relationships. The key informant in South India who is a parent of a female student in India, said that she was only aware of terms such as gay and lesbian and did not approve of such behaviors. This key informant however said that she is aware of same-sex behaviors taking place among some college students.

The key informant who is a psychologist in South India said that she frequently counsels homosexual individuals married to heterosexual individuals owing to societal pressure and, stigma towards homosexuality. She said that she has counseled more lesbian women married to

heterosexual men than gay men married to heterosexual women. She also noted lesbian women she counseled seem express extreme feelings of hate/displeasure towards their spouse and marriage. Two key informants and two female individual interview participants in the U.S.-Mexico border region suggested there could be same-sex behaviors taking place among male Indian college students in the U.S.

Theme 3: Globalization as a factor which shapes HIV risk

Two of the 21 female students who participated in individual interviews in India and eight of the female students who participated in the focus group in South India said that they believed that the current information technology boom and the multinational companies established in India are influencing the risk behaviors of the current generation of college students. Similarly eight participants from the male focus group conducted in South India indicated that the current outsourcing trend from the U.S. to India may influence the risk behaviors of college students. They explained that working night shifts due to difference in international time zones and interacting with individuals from other countries where it may be acceptable to be a social drinker, particularly in the case of women, may influence the perceptions of youth in India.

In addition, 8/10 male and 6/10 female focus group participants said that Indian college students also do internships in these companies and thus interact directly with different cultural norms. Participants said that college students in India also may be influenced by different social and cultural norms due to interacting with individuals (of Indian origin or other nations) in the pubs they frequent. Travel within different parts of India, urban and rural provides a venue for increasing interactions between individuals of different socio-cultural norms pertaining to risk

behaviors. This travel is often prompted by differing locations of the IT industry, mostly multinational, according to most male focus group participants in South India (n= 8),

Three of the eight of the participants in the male focus group in South India also said that the exposure to different cultures through cable television and the internet also influences the socializing, alcohol and drug use and sexuality norms among college students while in India.

Theme 4: Suggested strategies to reduce HIV risk for an Indian college student planning to immigrate to the U.S.

Table 26 shows the responses given by participants from both study sites when they were asked what they would advice a friend or relative who is planning to pursue education in the U.S. A majority of female participants in South India said that they will advice the prospective student to not engage in sex “wrong practices” while in the U.S. meaning, pre-marital sex. Most students in the U.S. said that they would advise individuals to “protect” themselves from HIV. Several students also specifically noted that they would encourage safe sex practices. Around one-third of the women living in India indicated that they would advise abstaining from drugs. Other suggestions included getting tested for HIV and avoiding alcohol. Some women residing in the U.S. said that they do not see the need to discuss HIV/AIDS with a female student coming to the U.S. because they felt that women “like ourselves” cannot get HIV through sex.

In addition to the above mentioned themes that emerged from participants’ responses with respect to the research domains probed, a common emergent theme was that some topics/issues were not mentioned by all female students in the U.S. and in South India. These topics were mentioned only after the investigator posed many probing questions. Even when these topics were mentioned after probing, the participants were hesitant to discuss them.

None of the participants mentioned marriage as a risk for HIV before the PI specifically asked about it (Table 27). Similarly, none of the female students (n=52) discussed the possibility of same-sex behaviors in relation to heterosexual marriages and the relevance of such behaviors to HIV risk. Same-sex behaviors were discussed only in terms of what “gay” and “lesbian” means and the stigma towards homosexuality. Even when some participants said that same-sex behaviors can transmit HIV, they were referring to the transmission of infection between same sex partners and not the possibility of transmission between a bisexual individual and a heterosexual individual.

None of the female participants living in the U.S. or India identified the female condom as a device for protecting against HIV. Only three participants in the U.S. said that they had heard about female condoms. All participants indicated that sex referred only to vaginal penetrative sex. None mentioned oral or anal sex in this context. However, none of the participants referred to sex directly and always used words like “wrong practices”, “crap”, “that”, “relations”, “malpractices” etc. This trend in not mentioning the word sex was also observed in male focus group participants at the both sites. Such hesitation among participants to discuss these topics has important implications for understanding norms which may affect these participants’ ability to obtain and act upon information related to HIV/AIDS.

The key findings from the above data analysis were examined in relation to evidence from literature and the theoretical framework guiding this study.

CHAPTER 5: DISCUSSION

The most significant findings of this study were that the female South Indian college students in the U.S. do not appear to perceive they have a personal risk for HIV despite having adequate basic knowledge of HIV/AIDS transmission and being aware of HIV risk behaviors within their social networks. Most women have not examined their future HIV risk and equate their perceived high HIV resilience to their avoidance of engaging in risky HIV behaviors. The structural violence in the study participants' sending and receiving environments appears to affect their HIV risk and resilience as women, immigrants and students.

The level of HIV awareness related to the causal organism, main modes of transmission, available treatment, and commonly available prevention strategies is mostly adequate among the female South Indians attending college in the border region. Specifically, they reported that HIV is caused by a virus which makes the human immune system defenseless against infections. They also appeared to be knowledgeable about HIV transmission caused by heterosexual contact and unsterile injections. The female South Indian students living in the U.S. were aware that HIV is incurable and knew about antiretroviral therapy. Many also reported being cognizant of efforts to develop a vaccine for HIV and were able to explain the difference between being HIV positive and having AIDS. The results suggest that Indian women attending college in the U.S. appear to be aware that male condoms and safe sex practices can prevent HIV transmission. However, a significant minority, at least one-third, of the participants at the U.S. site said that they were unsure about HIV transmission through same-sex practices and how this relates to HIV risk among heterosexual individuals, especially women.

The high levels of HIV/AIDS knowledge seem to be surprising given the fact that these women rarely discuss the disease within their social networks. This infrequent discussion of HIV/AIDS reported by the study participants suggests that the social taboo on women discussing AIDS documented in literature for decades still exists (Chatterjee, 1999). The responses from the South Indian women attending U.S. colleges also indicate that power differences between genders and socio-cultural values dictate that “good” Indian women have to be ignorant of sex (Gupta, 2000). However, the high levels of knowledge about HIV transmission and prevention demonstrated by the study participants suggest that women in South India receive information about HIV/AIDS despite socio-cultural norms which expect women to be ignorant of issues related to sex. This finding implies that South Indian women can acquire adequate knowledge about HIV/AIDS despite socio-cultural values which discourage them from possessing such knowledge. The lack of discussion about HIV/AIDS within the participant social networks do not necessarily mean that these women are experiencing barriers to gain adequate information about HIV/AIDS or that they are not adequately informed on issues related to sex (Gupta, 2000, Chaterjee, 1999).

The high levels of HIV/AIDS knowledge present in the South Indian female college students participating in this study contrasts with findings from an earlier study which probed knowledge of HIV/AIDS among college students in South India by Lal and associates (2000). The study surveyed 625 randomly selected college students in South India. The authors concluded that female students were less aware of HIV/AIDS compared to male students. They recommended that AIDS awareness programs in India should increase their focus on educating female college students. They focused exclusively on undergraduate college students in a South Indian State different from the present study which included graduate students. This may be one

reason for the conflicting results. Similarly, Seth & McNair (2004) hypothesized that the socio-cultural taboo on discussion of sex prevents college students from gaining accurate information about HIV/AIDS prevention. Their study surveyed 188 college students including 141 women in India. The authors concluded that there is low awareness about safe sex practices to prevent HIV infection. However, the undergraduate female college students who participated in this study in South India also demonstrated high levels of knowledge pertaining to the cause and transmission of HIV. Hausner (2000) conducted a study involving 35 in-depth interviews and 1600 surveys among male college students in Chennai, South India. They reported 80% of the study participants showed high levels of knowledge about HIV transmission but they do not apply this knowledge to reduce their individual risk for HIV. The implications of this finding for HIV risk among female college students in South India must be investigated.

Another study conducted by Ananth & Coopman (2003) among women of childbearing age in four major Indian cities discovered misperceptions pertaining to mother-to-child transmission and condom use within the study population. Other studies (Hawkes & Santhya, 2002; Godbhole & Mehendale, 2005) have suggested these misperceptions can greatly increase the risk for mother-to-child transmission of HIV for Indian women. The female South Indian college students in the U.S. who participated in the present study appeared to be inadequately informed about mother-to-child-transmission of HIV and specific stages of transmission of HIV during the perinatal period. Only three female participants in the U.S. reported that prenatal antiretroviral therapy can reduce the chances of mother-to-child HIV transmission.

About 50% of the female Indian college students in the U.S. who participated in individual interviews in this study had misperceptions about HIV transmission through same sex practices and how it relates to HIV risk for women through marriage. These participants

appeared to believe that an individual had to be either homosexual or heterosexual. Most of the female Indian college students in the U.S. said that a person could be bisexual, but did not refer to this behavior in terms of HIV transmission through sex. In addition, a majority of the female South Indian students in the U.S. appeared to believe that same-sex behaviors are not uncommon among college Indian college students. This belief may be related to the diverse identities of MSM in India who often hide their homosexuality. Many MSM find themselves in a heterosexual marriage due to social pressures and cultural taboo on homosexuality in South India (Go et al., 2004; Khan, 2005). Hausner (2000) reports that forty-five percent of MSM college students surveyed in Chennai, South India also had sex with a woman. These findings in the literature suggest that there the South Indian women attending colleges in the U.S. may be unaware of the high prevalence of same-sex behaviors among male Indian college students and the implications of such practices on HIV transmission in a heterosexual marriage.

The female South Indian college students in the U.S. reported that risk behaviors such as alcohol and drug use, unsafe sex and possible same-sex behaviors were frequent among Indian college students both in South India and the U.S. These risk behaviors were also reported by the college students in South India. This finding matches evidence in literature which identified a high prevalence of risk behaviors such as alcohol use, drug use, and risky sex behaviors among Indian college students (Abraham & Anilkumar, 1999; Hausner, 2000; Hausner, 2002; Seth & McNair, 2004; Go et al., 2004; Potdar & Koenig, 2005). Risky sex behaviors include infrequent or no condom use and MSM engaging in unprotected sex inside heterosexual marriages (Go et al., 2004).

One female South Indian college student in the U.S. and five female college students in South India reported abuse of over-the counter cough medication among their student networks.

The drugs most frequently mentioned by study participants in the U.S. were “weed”, “dope” “marijuana” and “pills” while those mentioned by study participants in South India are “abin”, “ganja”, “heroin” and “brown sugar”. The Indian drug use literature reports prevalence of injection drug use particularly with heroin Kumar (2000). Perception of such risk factors among immediate social networks did not seem to relate to reporting personal risk for HIV by study participants.

HIV/AIDS appears to be mostly perceived as a social but not a personal risk among female Indian college students in the U.S. even though they are aware of HIV risk behaviors within their social networks. Their perception of being at low risk for HIV seems to be due to the fact that they are not currently engaging in HIV risk behaviors such as injection drug use, sexual intercourse, or exposure to unsterile clinical procedures. This reported lack of perception of individual risk among the female study participants may also be related to Indian social norms that make it unacceptable for a “good” woman to develop symptoms of STIs (Hawkes & Santhya, 2002).

The study participants may not perceive personal risk owing to a “cognitive error” or “optimistic bias” as explained by Sobo (1995). Accepting one’s risk for HIV may equate failure to adhere to social standards while denying personal AIDS risk translates to “covertly or overtly” denying that one is not involved in socially and culturally stigmatized behaviors (Sobo, 1995). According to the female South Indian college students in the U.S., premarital sex, open discussion about sex and contraception, alcohol use and discussion about HIV prevention are highly stigmatized in the Indian society. This stigmatization may contribute to the personal AIDS-risk denial among the female study participants in the U.S. In addition, Indian cultural beliefs dictate that women must accept the beliefs of elders in the family (Saha, 2005). Such

beliefs are in turn based on what society regards as right and wrong. Indian socio-cultural norms stigmatize women making independent decisions about their sexual and reproductive health (Saha, 2005). This barrier that reduces women's independent decision-making about sexual health may also prevent study participants from examining their own risk.

The lack of perception of personal risk for HIV among the female South Indian college students living in the U.S. despite their high levels of knowledge about HIV/AIDS does not completely support the Health Belief Model's constructs of perceived severity (Glanz, 1990). According to the HBM, an individual's belief about the seriousness of a health condition may avoid harmful behaviors causing the particular health condition. Perceived severity of a health condition can also cause the individual to initiate beneficial health behaviors which can reduce risk. The South Indian female students in the U.S. who participated in this study reported a reduction in their current HIV risk by not engaging in risk behaviors such as injection drug use and unprotected sexual intercourse. However, all these women do not perceive HIV risk in future and do not plan to ask for a pre-marital HIV test from their future spouses even in arranged marriages. Similarly, most of these women believe that it is inappropriate to initiate discussion about safe-sex practices before or after marriage with their spouse.

The barriers perceived by these women with respect to asking for a pre-marital HIV test, demonstrating knowledge of sex, contraception and HIV, and negotiating condom use may affect their ability to reduce their HIV risk. In addition, these perceived barriers seem to affect the self-efficacy of participants or "the conviction that the can successfully execute the behavior required to produce the outcomes" (Bandura, 1977) in terms of reducing HIV risk. Only a handful of participating female South Indian students in the U.S. said that they will ask for a pre-marital

HIV test. Of these, two participants said that they would go ahead with the marriage even if their future husband refuses to take a pre-marital HIV test.

All of the female South Indian college students who said that they do not plan to ask for a pre-marital HIV test in the future cited societal constraints for this. All female study participants in the U.S. agreed that pre-marital HIV testing is an effective way to reduce their HIV risk which demonstrates high expectancies or values placed on HIV testing outcome. However, the social and environmental norms which stigmatize pre-marital sex, HIV/AIDS, HIV testing, and reproductive health decision-making by women constrain women from asking for the HIV test despite the high value they place on it.

The knowledge gained by these individuals from observing other individuals who execute the behavior in terms of negative social consequences (expectations) seems to prevent them from wanting to ask for a HIV test or negotiating safe sex practices. The data are consistent with the constructs of expectations and expectancies of the Social Cognitive Theory (Bandura, 1997, Glanz, 1990). However, the participant responses with respect to requesting or taking the HIV test demonstrate that expectation can be either positive or negative. Negative expectations can prevent individuals from engaging in beneficial health behaviors even if expectancies placed on the direct outcome of the specific behaviors (e.g. HIV test) are positive. This suggests that expectancies should be examined in relation to the direct and indirect outcomes of the health behaviors. For example, a South Indian female college student can reduce her HIV risk through marriage if she asks for a pre-marital HIV test. This is the direct positive outcome from the test. However, asking for a pre-marital HIV test can stop the marriage proceedings which will be an indirect outcome of asking for the test. The expectations and expectancies of immigrant students

with respect to HIV risk reduction strategies in the sending and receiving environment may impact their decision making pertaining to engaging in such strategies (Figure. 4).

The female study participants in the U.S. appear to retain certain socio-cultural norms related to sexuality and HIV/AIDS in their sending environment. These women reported that they believe that the traditional social norms which define an ideal Indian woman and stigmatize STIs remain strong among local Indian student networks in the U.S. These norms seem to reduce the women's ability to engage in future HIV risk reduction in both environments. This influence of norms and environment on women's capacity to initiate HIV prevention behavior demonstrates the reciprocal determinism described in the Social Cognitive Theory (Bandura, 1977). The individual, environment and behavior constantly interact with each other to affect behavioral patterns. All female South Indian college students stated that pre-marital HIV testing will be conducted in Indian marriages only if it was required by law. This emphasizes the reciprocity between the environment, individual and behavior (Figure 4).

Macintyre & Kendall's (2005) social proximity theory of HIV/AIDS proposes that reduction of denial is directly proportional to level of perceived susceptibility to HIV. The personal and community experience of HIV/AIDS can shape a person's perception of susceptibility to HIV. Only one female participant in the U.S. indicated personally knowing an individual (a relative) who died of AIDS related causes. In addition, all study participants have been socially exposed to Indian norms which prevent "ideal Indian women" from engaging in risk behaviors especially before marriage. The participants also described characteristics of an ideal woman which reinforce cultural norms preventing Indian women from taking action against HIV in the marital or pre-marital context. These factors may also help to explain the reported low levels of perceived personal risk despite the social proximity of HIV in their sending

environment. Hence social proximity to HIV in the sending environment may shape immigrants' perceived susceptibility and risk to HIV in the receiving environment (Figure 4).

The study findings also suggest that multiple contexts in the female South Indian college students' environments intersect with gender to influence the HIV vulnerability, risk and resilience of the female Indian college students. Such contexts can be related to the sending and receiving environments. For example, being a female college student from South India does not necessarily or automatically translate to a high risk for HIV infection even though HIV incidence and prevalence of HIV in India is elevated. Contexts such as formal education, knowledge of HIV, social norms pertaining to sexuality, sex and marriage, stigma towards certain risk behaviors, rurality/urbanity, migration, local and international laws related to HIV/AIDS, social class, globalization, acculturative stress, access to services and economic status may intersect with gender to dictate the HIV risk and resilience of the study participants in both environments. Although these contexts are cited in literature with respect to the HIV risk of Indian women, they are often described as separate entities (Nag, 1995; Raj & Silverman, 2003; Solomon et al., 2003; Khan 2005). As has been suggested by Zambrana & Thornton Dill (2006), these contexts are not mutually exclusive, but can shape each other to define an individual's health risk and risk reduction resources.

The perceptions about the multiple contexts that affect HIV/AIDS risk and resilience can vary in relation to the lived experiences an individual, i.e., a female South Indian college students, has in her sending and receiving environments. Similarly, the manifestations of behaviors related to these contexts can be shaped by socio-cultural norms and expectations the female college student is exposed to in her sending and receiving environment. The study results support the findings of Solomon and associates (2003) indicating that Indian socio-cultural

norms that highly value pre-marital virginity, motherhood, and submissiveness put Indian women at risk for HIV. It has been reported that Indian women who are married and report monogamous relationships are emerging as the at-risk group for HIV in India (Solomon et al., 2006). This finding may help to explain the low levels of personal HIV risk perceptions among young women from India such as those found in the present study.

The retention of norms from the sending environment in the new/receiving environment depends on many factors. The responses from the female and male South Indian college students who participated in this study indicate that social norms related to specific behaviors (e.g., alcohol use, pre-marital sex) in the individual's sending environment can affect the retention of Indian socio-cultural norms in the U.S. In addition, the exposure to norms from the receiving environment while the individual is in her or his receiving environment can also affect the retention of such norms. Furthermore, being away from the constant supervision of family and society coupled with being exposed to the behaviors of Indian students in the receiving environment may also dictate retention of norms. The findings from this study also support observation of Deren and associates' (2005) that traditional and evolving social norms impact the HIV-related risk behaviors of immigrant populations. Shedlin and colleagues (2006) also report that HIV risk behaviors can be shaped by Indian socio-cultural norms among recent male Indian immigrants in the U.S.

Migration can influence how sexuality and sexual relationships are shaped. These constructions can in turn dictate HIV risk behaviors. The social norms and gender roles in the sending environment appear to shape risk behaviors differently for males and females. Parrado & Flippen (2010) report that norms dictating the tolerance of male infidelity in the sending environment of Mexican immigrants appeared to be weaker in the U.S. receiving environment.

However, many study participants in this study indicated that the Indian norms for male sexual behavior prevail within the student networks whether in the U.S. or in India. In contrast, one of the two female participants in the U.S. who were living with their boyfriends indicated that her family in India was not aware of her living arrangement in the U.S. and that they would not approve. These responses may imply that relationships may be reconstructed as a result of migration. However such reconstructions may depend on the gender norms in the sending and receiving environments (Parrado & Flippen, 2010). Interestingly, all participants indicated that it is generally perceived that many Indian students in the U.S. engage in pre-marital sex.

The female study participants in the U.S. emphasized that the frequency of communication with parents and family in India has “no relationship” with the HIV risk behaviors of Indian students in the U.S: “you don’t talk about all this with your parents; you don’t think of parents when you are engaging in risk behavior”- quote from individual interview participant in the U.S. In a similar study that probed HIV risk in new immigrant communities, newly immigrated Indian males living in the New York City area reported that although they do engage in risk behavior, they do not communicate about these with family or brides-to-be in India (Shedlin et al., 2006). However, such communication between recent immigrants and their sending environment must be examined in relation to acculturation (Figure 4).

HIV-related risk and resilience can be defined as different phases of study participants’ lives. Resilience and risk for HIV in one context of a person’s life does not necessarily translate to another environment. The resilience exhibited by the female South Indian students in the U.S. regarding migration to a foreign country, being employed, pursuing education and forming new social networks is noteworthy. Many of these women reported having had extensive family and social support in India. However, this resilience does not seem to apply to all contexts of their

lives. For example, all female South Indian college students exhibit high levels of potential resilience based on their reported absence of engaging in risky HIV behaviors but such resilience levels may be almost reversed when the possibility of HIV risk in future is considered no matter whether they plan to live in the U.S. or in India.

HIV risk through marriage may be high owing to the reported inability of women to ask for a pre-marital HIV test. This potential increase in future HIV risk may be related to participant misconceptions about their individual susceptibility to HIV since it appears that most have never examined their susceptibility. This study finding supports Hausner's (2000) conclusion that Indian college students need resources which can aid to "personalize" their risk for HIV since most of them already possess adequate general knowledge of HIV/AIDS.

Acculturation is traditionally defined as the process of cultural and psychosocial change which occurs when two different groups of people come into contact (Berry, 2005). Acculturation was viewed by all study participants as a phenomenon that may occur in both the sending and receiving environments with respect to Western norms related to socializing, sex, sexuality and alcohol use. The perception of change in values/norms among college students in South India was attributed to the recent trend in out-sourcing jobs from the U.S. to India and the establishment of multi-national companies in India. The increased interactions among South Indian college students, Indian and non-Indian colleagues who visit India from the U.S. and other countries may be responsible for acculturation changes in HIV risk behaviors. This dimension of acculturation requires examination to better understand its importance in shaping the HIV risk of the study population in both environments (Figure 4). The current trend in globalization must be examined in terms of its implications for HIV risk, prevention interventions and policy in the sending and receiving environments of immigrants (Altman,

1999). The availability and access to HIV prevention and treatment services may be affected in both environments by globalization. Although globalization primarily occurs with respect to economy, the resulting migration and communication are bound to impact factors related to HIV risk. The acculturative processes and stress related to migration may have unique roles in shaping HIV risk in relation to globalization in each environment.

The process of acculturation in the receiving environment of the Indian college students may also determine their HIV vulnerability, risk and resilience (Figure 4). The current study findings suggest that adherence to traditional Indian norms prohibiting pre-marital sex and multiple sexual partners may increase the resiliency of female South Indian college students to HIV as these reduce the probability that they will engage in high risk sexual practices. On the other hand, they are more susceptible to HIV infection if they engage in risk behaviors while retaining other aspects of Indian socio-cultural norms which restrict their ability to negotiate condom use (Tiziana et al., 2008; Hawkes & Santhya, 2002).

The HIV risk of female Indian college students in the U.S. may also be affected by the acculturation of their male counterparts. The Indian socio-cultural norms which excuse men from engaging in heterosexual risk behaviors and stigmatize male same-sex behaviors can increase these risk behaviors among male Indian students living in the U.S. As the study participants pointed out, same-sex behaviors among Indian students will be probably kept hidden even in the U.S. for fear of isolation by the local Indian student networks. Such male behaviors can increase a female college student's HIV risk with respect through dating and marriage. This finding supports the results from other studies indicating that Indian women are at increased risk for HIV owing to difficulty in negotiating condom use, faulty assumptions of monogamy in married relationships, intimate partner violence, and inability to avoid non-consensual sex (Tiziana et al.,

2008; Go et al., 2004; Solomon et al., 2003). The reported inability of the female South Indian college students in the U.S. to take measures to reduce their HIV risk through pre or post-marital sexual intercourse despite their high education levels and HIV/AIDS knowledge suggests that gender inequality can transcend education and specific knowledge to increase a woman's HIV risk.

All female South Indian college students in the U.S. who participated in this study can be described as integrated individuals in terms of Berry's Model of Acculturation (Berry, 2005; 1991). Integrated individuals wish to maintain their identity with their home culture while absorbing some characteristics/behaviors from their new culture. The present study findings suggest that integration among the study population may result from necessity rather than choice. Many female South Indian students in the U.S. indicated that they had to get accustomed to living by themselves in a new environment after leading a sheltered life in India. On the other hand, responses the female students from urban areas in South India who were already exposed to Western norms in South India suggest that they may have commenced their integration process in India (Figure 4). This finding supports Handwerker's (2005, 2002) culture theory which states that the experiences of an individual with respect to place of birth, timeframe in history when the individual is born and raised and the environment in which the individual is raised affects how the individual responds to group norms. The reported group norms among the female Indian college students in the U.S. appear to be influenced by their experiences in both South India and the U.S. The result is absorption of certain norms from the receiving environment and retention of certain norms from the sending environment.

The choice of absorbing or rejecting a certain norm in the U.S. appears to depend on the female South Indian's students' personal or vicarious experience of consequences of such norms.

For example, a female student living in the U.S. said that if it was discovered that an Indian female student planned to take a HIV test, negative rumors would circulate and this student could be isolated by the local Indian student network. This participant based her assumption on her observations with respect to the stigma towards HIV in South India and the social ramifications of openly taking a HIV test in India. This participant also observed that the same norms existed among South Indian student networks in the U.S. Hence, she concluded that an Indian student will hesitate to utilize HIV testing services in the U.S.

The current study findings also suggest that integration in a new environment is based on first-hand lived experiences of an individual consistent with Handwerker (2002) theorizes as well as vicarious learning as hypothesized by Bandura (1997). Handwerker (2002) also has suggested that an individual's lived experiences shape the sensory input which enables and influences their responses. The Social Learning Theory posits that the value a person places on certain behaviors and outcomes affect their responses. Both these theories look at sensory input which modifies an individual's response. Berry's (2005, 1991) definition of integration can be viewed as responses of individuals based on sensory input from direct and indirect experiences. Handwerker (2002) views culture as set of norms shared by a group of people based on "a coherent set of patterned and coordinated activities". This set of shared norms is justified by shared assumptions about world experience (Handwerker, 2002). The findings from the present study suggest that the shared assumptions on which group norms are based can result from both direct and vicarious learning and can differ by contexts. These contexts can include environment and gender.

The responses from the female South Indian students in the U.S. and in South India who participated in the current study indicate that the socio-cultural norms, gender expectations and social stigma to HIV/AIDS in the sending environment(structure) can affect utilization of HIV

prevention services in both the sending and receiving environments (Figure 4). All study participants agreed that access to HIV testing is better in the U.S. owing to the anonymity involved. These participants explained that the chances of being seen by someone in their social network while going to the HIV testing center is relatively low in the U.S. as compared to India. However, they explained that the social ramifications of taking the HIV test should the fact be known to fellow-Indian students will prevent them from taking it. Similarly, the Indian norms which place high value on marriage and pre-marital virginity for a woman may prevent a female Indian college student from taking a HIV test herself or demanding one from her future spouse. On the other hand, female students in South India and the U.S. observed that a married woman will not be stigmatized for taking the HIV test since she is expected to have had sex after marriage. All participants said that the sexual nature of HIV transmission stigmatizes HIV testing and thus, increases the inhibition towards testing by elders in the society. This finding emphasizes the relevance of contexts in shaping risk and preventative behaviors within immigrant populations and emphasizes the need to examine HIV risk with respect to specific contexts in these populations (Parrado & Flippen, 2010).

Some study participants in the U.S. said that their families will insist upon pre-marital HIV testing and will refuse to go ahead with arranging the marriage if the prospective groom does not consent to testing. Others said that they will get married to the person their parents choose only if he agrees to take a pre-marital HIV test. Such demands for pre-marital HIV test can be viewed as positive deviance, particularly given the stigma reported towards HIV and the negative consequences such demands may usually have on an Indian girl's life (Sternin et al., 1998). Factors that motivate these individuals to deviate from the norm to take action to reduce the risk for HIV through marriage should be examined with respect to such positive deviance.

The strategies undertaken by these individuals to demonstrate positive deviance in reducing their HIV risk and the manner in which such strategies can be replicated in the community need examination.

The female college students in South India and the U.S. suggested that HIV prevention education should focus on reducing the stigma towards HIV testing among parents/elders in the Indian society. These women also said that younger men should be informed about the barriers faced by women to negotiate pre-marital HIV testing and the lack of a definitive test to “prove” a woman’s virginity. The participants explained that the common belief that a virgin should bleed the first time she has sex and/or should have an intact hymen creates mistrust and problems in relationships. More than half of the female students who participated in the study said that sexual contact without vaginal penetration frequently occurs in dating relationships among college students. One student who engages in such contact with her boyfriend said that condoms are not used during such relationships. This avoidance of vaginal penetration is related to the high value placed on pre-marital virginity for Indian women. All participants defined sex as vaginal penetration. This finding is critical and concurs with the observation that Indian women may engage in unprotected/risky non-vaginal intercourse to protect their virginity (Solomon et al., 2003). The above findings suggest that the female students appear to be at risk for engaging in unsafe sex practices since these are not considered as sex by them.

Participants’ responses indicated that female Indian college students may not be empowered to reduce their risk for HIV through marriage. Many students said that they will not be able to ask for a pre-marital test since their parents or future parents-in-law will oppose it. The women also said that this will negatively affect their marriage prospects, an important consideration since marriage is very important for Indian women. They said that even if their

parents realize their risk for HIV, they will rarely be in a position to ask the prospective groom to take the test owing to the power differentials between an Indian groom's and bride's parents. The participants explained that Indian tradition dictates that the girl's parents must acquiesce to the groom's side in arranged marriages. The female participants used the words "sad" "depressed" "frustrating" and "feeling trapped" to describe their inability to take action to reduce their marital HIV risk. One participant described the situation of many female Indian college students, despite their high levels of education and HIV knowledge as akin to that of a "*baliadu*" [sacrificial lamb].

Overall, the research findings imply that the HIV risk and resilience levels of female Indian college students living in the U.S. vary contextually. These contexts can differ or remain the same in their sending and receiving environments. The norms in each environment and the manner in which they are perceived by the study population and other groups in the environment may shape the HIV risk of the study population in each context. The participants' responses in terms of socio-cultural norms and gender expectations placing them at risk for HIV in both the sending and receiving environments point to gender inequality as the root cause of most potential HIV risk for them. The HIV literature has identified gender inequality as one of the main causes of HIV risk in women (Farmer, 2001).

A myriad of factors ranging from biological susceptibility and lack of awareness of HIV to intimate partner violence and cultural norms are reported to increase a woman's risk for HIV (Nag 1995; Farmer, 2001; Solomon et al., 2003; Schulz & Mullings, 2006; Tizaina et al., 2008). Engaging in commercial sex work, trading sex for drugs, injection drug use, being married to MSM, sexual practices in each culture, minority status, migration and low health literacy are some of the other factors cited as the cause for the high HIV risk in women (Mayer et al., 2000;

Hawkes & Santhya, 2002; Wong et al., 2004; Solomon, Solomon & Ganesh, 2006 ; Shedlin et al., 2006; Go et al., 2004) . In addition, research also highlights the lack of HIV prevention services, low perceived susceptibility and health beliefs like “fatalism” as causal for HIV in women. The findings from the current study which suggest reduced participant perception of personal HIV risk with respect to multiple contexts raise the question whether these factors are truly causes or merely symptoms.

The interviews with the female Indian students in the current study highlighted one common theme to the described inequalities: structural violence. As Farmer (2001) points out, an emphasis on increasing personal agency or self-efficacy of women to reduce their HIV risk by providing HIV prevention education, designing “culturally sensitive interventions”, and increasing availability of HIV testing services may not be the solution to reducing women’s HIV risk. Such strategies imply that the women are at risk for HIV or victims of HIV due to their lack of agency. This is akin to blaming the victim. These strategies suggested by researchers are no doubt well-intentioned. However, they distract the focus from the social structures which increase women’s HIV risk globally.

The women who participated in the present study do not lack knowledge of HIV and do not perceive low levels of risk behaviors nor report a lack of HIV testing services. Instead, they report they are not able to ask for a HIV test, not able to go to the testing center, and not able to negotiate condom use due to their perceived dependence on marriage and on men as responsible for such decisions. These women’s responses may be construed as denial of their personal HIV risk. Some of them also said that they attribute their HIV risk status to “fate”. In lieu of the structural violence faced by these women in the form of social, legal and political systems in their sending and receiving environments, could such denial and fatalism actually be

“pragmatism”? (Anglin, 2006). Chavez et al., (1997) have documented such pragmatism as present among minority women facing structural violence. This pragmatism may stem from being realistic about their lack of resources or helplessness and not from what is traditionally referred to as “culture”.

Self-efficacy or personal agency described by frameworks like the Health Belief Model and the Social Cognitive Theory is undoubtedly necessary for reducing HIV risk. However, as Farmer (2001, p.84) observes, “there is something unfair about using personal responsibility as a basis for assigning blame while simultaneously denying those who are being blamed the opportunity to exert agency in their lives”.

The socio-cultural norms and gender roles cited by the study participants may be “effects” of structural violence and not the “source” of HIV risk for these women (Farmer, 2001). Ethnicity, sending and receiving environment and gender should be considered in relation to HIV risk (Zambrana & Thornton Dill, 2006) but must be examined as “co-factors” to structural violence (Farmer, 2001). Structural violence is commonly discussed in relation to the dire outcomes/consequences of infections such as tuberculosis and HIV occurring at the community level (Farmer, 2001). Such outcomes usually are produced due to decreased access to prevention and treatment. However, the structural inequalities which promote socio-cultural and gender norms that act as barriers to HIV risk reduction among the current study’s participants can also be viewed as a primary dimension of structural violence. If such structural inequalities to HIV risk reduction did not exist to begin with, obviously the widespread devastating outcomes of HIV infection will not be produced.

Gender inequality must be considered as one of the factors which interact with other contexts to determine the HIV risk of women. “Culture” with respect to HIV risk in this and

other study populations can be viewed as the shared set of norms shaped by sensory input such as Handwerker (2002) describes. However, these group norms related to HIV risk must be examined as shared behaviors that result from structural issues such as poverty, lack of an affordable and accessible health care system, gender inequality, laws which encourage subtle discrimination and governing systems which deny women the power to act against HIV. These changes in such shared behaviors in the receiving environment of the female college students in the present study may aid in explaining their process of acculturation regarding HIV risk (Figure 4). The findings from the current study suggest that “culture”, “acculturation” and “socio-cultural norms” related to HIV risk among female South Indian college students in the U.S. require further examination in relation to the structural inequalities that determine these phenomena and norms. This strategy may also be useful in addressing HIV risk reduction in other women and minority groups.

Parrado & Flippen (2010) examined factors related to sexuality and health behaviors in the sending and receiving environments of Mexican immigrants in the U.S. They concluded that specific contexts in the sending and receiving environments of these immigrants dictated behaviors including initiation of sex, sex with commercial sex workers, other risky sex practices and marital infidelity. These contexts seem to shape risk behaviors in both environments due to return and cyclical migratory patterns of immigrants. The authors stress the need for public health professionals to “move beyond individual informational campaigns” to addressing broader structural contexts among immigrant communities. The evidence from the current research study supports Parrado & Flippen’s (2010) findings. Specific contexts were seen to be related to determining HIV risk and risk behavior among female South Indian College students in the U.S.

This definitely warrants for a broader, national and international level focus on HIV/AIDS among immigrant groups.

STRENGTHS AND LIMITATIONS OF THE STUDY

One of the main strengths of this study is the rich in-depth data collected. Employing qualitative data collection methods ensured that the questions posed to participants could be modified according to each individual to gather the most information possible in relation to the study's research domains. The ethnographic data collection methods utilized aided participants to discuss their opinions pertaining to HIV/AIDS in detail. The interactions between the researcher and the participants also aided in enhancing the quality of data. The familiarity and trust gained between the research participants and the researcher facilitated rich discussions even with sensitive topics. Such in-depth understanding of participants' attitudes and experiences related to the study domains may have been missed in a close-ended survey (Creswell, 1998). Field work conducted with the key informants in each research site further enhanced the researcher's ability to understand the study participants' experience with respect to their initial acculturation process.

This study compared the factors which may affect the HIV risk of the study participants in their sending and receiving environments at the same point in time. Such comparison enables a better understanding the configurations of sexual relationships and the adaptation mechanisms of immigrants in a new environment (Parrado & Flippen, 2010). In addition, migration patterns between the sending and receiving environments and their potential effects on HIV risk and resilience in both environments can be understood by examining both these environments at the same point in time. Most research studies probing sexuality and migration document data from prior experiences of immigrants in their sending environment and hence lack comparable data from both environments (Parrado & Flippen, 2010). The potential for dynamic changes in

attitudes and practices related to sex and sexuality in the sending and receiving environments stresses the need to have comparable evidence of such attitudes and practices from both environments. This study's findings which address the configuration of sex, sexuality and HIV risk simultaneously in the sending and receiving environments of female South Indian college students inform HIV research related to migration. These findings also stress the need to view HIV risk and resilience among immigrants in the U.S. from a broader/global perspective and have implications for public health policy addressing the same (Parrado & Flippen, 2010).

The use of a multi-level theoretical framework to guide this study enhanced the understanding to different contexts related to the HIV risk of participants particularly with respect to migration and acculturation. These theories also enabled understanding similar contexts related to HIV risk in two different environments and the dynamic nature of factor shaping these contexts. The findings from this study that suggest that acculturation of the study participants can commence in their sending environment imply the need for re-examining traditionally described migration and acculturation patterns. The direct and vicarious learning observed to contribute to the sensory input which shapes the study participants' configurations of risk and risk behaviors in the sending environment stresses the need for health promotion theories to address structural violence as an essential construct. In addition, the interactions between multiple contexts shaping the study participants' risk for HIV emphasize the need for public health models and theories to address the intersectionality of such contexts in relation to health disparities.

Although not an intended outcome of the study, the interactions between the researcher and the study participants frequently resulted in participants clarifying their doubts about HIV/AIDS. In addition, many study participants indicated that they had never examined their

personal risk for HIV with respect to marriage or risky behaviors of their partners prior to participating in this study. These women indicated that they would examine their personal risk for HIV as a result of participating in this study. Similarly, the parent of the female South Indian college student who was a key informant for this study indicated that as a result of participating in this study, she understands the benefits of pre-marital HIV testing and that even her daughter may be at risk for HIV. These outcomes can be definitely viewed as positive effects of participation in this study.

One of the limitations of the study was that the sample size is small in terms of statistical significance and external generalizability. However, the qualitative methodology employed in this study strives for gaining in-depth knowledge of the domain probed and not statistical significance. The purposive sampling strategy was formulated to achieve saturation of data and the sample size was determined based on the amount and quality of data collected from each interview, the scope of the study and the qualitative tradition utilized (Morse, 2000). The RDS method of sampling helps in making inferences of specific traits in participants' networks to the traits in the study population (Salganik, 2007). In addition, the sample in a qualitative study should not be too large to prevent detailed analysis (Sandelowski, 1995). Although the initially planned sample size (N=110) was not achieved, the sample size of this study (N=82) at both research sites achieved data saturation i.e. it was large enough to support "claims of informational redundancy" (Lincoln and Guba, 1985) with respect to the specific probes addressed in the individual and focus group interviews.

The current study's findings with respect to migration and risk behaviors, despite the smaller sample size, reflects evidence from a recent study that compared factors affecting sexuality and risk behaviors in Mexican immigrants in their receiving and sending environments.

Parrado & Flippen (2010) conducted a study examining migration and sexuality in relation to risk behaviors among Mexican immigrants in the U.S. and their peers in Mexico. The authors conducted a mixed-methods study that involved 464 individual interviews in the U.S. and 800 random surveys in Mexico. This large study reported statistically significant associations between international migration and initiation of sex, type of sex partner, perception of gender roles, and condom use in the immigrant population studied.

This study was also limited to probing attitudes and factors related to HIV Risk and resilience in one particular immigrant group in the U.S. In addition, the current study probes these factors only in relation in recent immigrants. However, such in-depth understanding of factors and contexts affect HIV risk of a particular immigrant population can be obtained only by limiting the investigation to that group. In addition, acculturation experiences can evolve over time (Handwerker, 2002; Carolyn & Berry, 1991). This warranted specifying that only recent immigrants be included in this study. On the other hand, the contexts experienced by the female South Indian college students in the U.S. may be common to U.S. college students from other countries although the factors shaping these contexts may vary by sending environments.

The fact that the interviewer belonged to the same local immigrant network as the students even though they were not in the same immediate social network may be considered as a venue for bias. A reporting bias related to social desirability and a bias related to having experienced the same phenomenon (acculturation) probed in relation to the participants and the researcher respectively should be considered. The interactions between the participants and the researcher which helped gain their trust and, the strategic choosing of “seeds” or initial participants in the study (Salganick & Heckathorn, 2004) helped to reduce participant related bias. The phenomenological approach called for setting aside any pre-suppositions the researcher

held about the phenomenon to be studied (Creswell, 1998). The researcher was cautious at every stage of the research to not allow any such pre-suppositions or prior experiences related to acculturation to affect the reporting and interpreting of data. The prior experiences of the researcher in terms of migrating from South India and initial acculturation in the U.S. was examined and discussed only in terms of comparing the same with the interpretations of the study participants' experiences. In addition, the data from the key informants aided in triangulating the data from the individual and focus group interviews.

The sensitive nature of the study topic may have prevented some participants from sharing their thoughts on the issues probed during the interviews. This hesitancy in discussing all issues related to HIV may be resulting from the norms in the participants' sending environment which discourage open discussions about sex and sexuality. In addition, the HIV associated stigma in participant networks may have prevented such discussions. A survey instead of the face-to-face interviews employed may have elicited responses to all questions posed given the sensitive nature of the topic researched. However, most study participants shared their thoughts and experiences in relation to the questions posed, and such in-depth understanding would not have been obtained in a survey. In addition, the exploratory nature of this study required gaining an in-depth understanding of the issues related to HIV risk of the study population before attempting to administer a survey to the population.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION 1:

The knowledge and awareness of HIV/AIDS appears to be adequate among female South Indian students attending colleges in the El Paso, TX - Las Cruces, NM region.

HIV/AIDS awareness education targeting the study population must move beyond just providing general information relates to cause, transmission of HIV and the benefits of HIV testing. Female South Indian students in the U.S. may be increased HIV risk not because of unawareness about risk behaviors, condom use or HIV testing but because of not applying the risks to their personal lives. HIV/AIDS education for this population needs to continue addressing basic information about HIV but, health educators must also design strategies which can help the study population examine their personal HIV risk (Hausner, 2000). In general, college students in the U.S. are reported to engage in risky HIV behaviors due to decreased perception of personal risk even when they possess high levels of HIV/AIDS knowledge (Bruce & Walker, 2001). Future HIV/AIDS research must examine ways to bridge this gap between knowledge and application of knowledge to self in order to reduce the HIV risk for college students.

CONCLUSION 2:

Perception of personal risk for HIV in the study population may not be related to possessing adequate knowledge of HIV/AIDS and awareness about HIV risk behaviors within immediate social networks.

In addition to the high levels of HIV/AIDS knowledge, female South Indian college students in the U.S. who participated in the current study appear to be aware of HIV risk behaviors in their immediate social networks. These women appear to be aware that certain behaviors can increase HIV risk and that these behaviors are prevalent within their social networks. However, this realization does not seem to be directly proportional to their personal HIV risk perceptions. These women appear to be able to identify risk for HIV among other women and men in their networks but not for themselves. Multiple explanations are possible for this contradiction between perception of community and personal risk. The female South Indian college students living in the U.S. seem to only examine their current personal risk and resilience for HIV but not their future risk. In particular, persons who do not engage in pre-marital sex may not consider their future risk for HIV transmission once married. On the other hand, these women could be reporting low perception of HIV risk or “denying” it due to an optimistic bias (Sobo, 1995). Optimistic bias denies involvement in risk behaviors covertly through denial of HIV risk (Sobo, 1995). This bias could also result from the perceived structural barriers for risk reduction (Anglin, 2006, Farmer 2001). HIV/AIDS researchers must examine perception or “denial” of HIV risk among women in a broader context that includes the effect of social inequalities on perception of risk. Recent social research suggests that social inequalities related to HIV/AIDS must be addressed as global issues and focus on improving access to healthcare as a whole for women (Schulz & Mullings, 2006).

CONCLUSION 3:

HIV risk behaviors appear to be prevalent in the social networks of the study population and may be shaped by factors in both their sending and receiving environments.

Factors in the sending and receiving environments of the female South Indian college students must be examined to gain an accurate understanding of their HIV risk and resilience. These factors frequently influence HIV risk behaviors of the study population in both the sending and receiving environments (Solomon et al., 2003; Raj & Silverman, 2003). HIV risk behaviors among immigrant populations in their receiving environment should not be examined as remnants of such behaviors from the sending environment. Instead, these behaviors must be investigated in terms of the factors in the sending environment that may promote them. Current mobility and migration patterns in both environments of the study population must be considered in relation to the HIV risk in this population. Recent trends in migration and globalization may initiate acculturation to the Western cultural norms while individuals are still in the sending environment. Internal and international migratory patterns in the study population are changing. The possibility that migration patterns among immigrants may not be just cyclical i.e., to and from the sending and receiving environment only, must be realized (Bhattacharya, 2004; Parrado & Flippen, 2010). Such changing patterns in migration and trends in globalization are bound to have effects on acculturative processes. Future HIV research focusing on prevention of HIV among the study population and other immigrant groups in the U.S. must re-examine the phenomena of acculturation in relation to changing migration patterns and HIV risk behaviors.

CONCLUSION 4:

Misperceptions among female and male Indian college students about same-sex behaviors can increase the study population's risk for HIV through marriage.

Same-sex behaviors are prevalent in every society. Similarly, the stigma towards homosexuality has been documented in every society. However, the degree of stigma to homosexuality varies by society and this can define how homosexuality is defined and expressed in a society. Indian social norms highly stigmatize homosexuality. In addition, a high value is placed on marriage and procreation through marriage. This is viewed as an obligation to the family in order to continue the family lines (Go et al., 2004; Khan, 2005). Until recently, a law banning homosexual relations existed in India. Each society defines what is viewed as maleness and femaleness. All these values, expectations and definitions that stigmatize homosexuality in the Indian society can result in hidden homosexuality. It also increases the likelihood that MSM and WSW will choose heterosexual marriage (Go et al., 2004). However, most of the female college students who participated in this study were not aware of the situation for MSM and WSW. Some study participants also believed that an individual has to be either heterosexual or homosexual and not bisexual. These perceptions and misperceptions related to same-sex behaviors may increase the risk for HIV through marital relations irrespective of their environment. HIV/AIDS education for the study population needs to include education about sexuality and social issues influencing the expression of sexuality in relation to HIV risk.

CONCLUSION 5:

Structural inequalities resulting in socio-cultural and gender norms that prevent Indian women from reducing their HIV risk may magnify these women's risk for HIV through heterosexual contact.

The socio-cultural norms and gender expectations in the participant networks seem to contribute to inequalities which can increase the study participants' risk for contracting HIV through heterosexual contact. Heterosexual contact can be a risk for these women both before and after marriage. The lack of access to condoms, inability to negotiate condom use, and risky non-vaginal /non-penetrative sexual contact increase their pre-marital HIV risk. Lack of awareness about MSM behaviors, inability to negotiate condom use, financial and emotional dependence on men, inability to discuss HIV as a personal issue and social pressures related to motherhood may place these women at high risk for HIV through heterosexual contact after marriage. These inequalities may transcend geographic boundaries to affect these immigrant women's risk for HIV. HIV risk reduction in the study population can be effectively addressed only if all key players who shape this risk are acknowledged. These key players include members of the participants' immediate social networks (parents, spouse, siblings, parents-in law, elders in the family, friends) and larger social structures such as the built environment, health care system and policy. HIV research and interventions must deliberately and continuously include these networks and systems in their efforts in order to get to the root cause of HIV in women. Choosing not to do so may equate blaming the victim or in this case, women, for being at high risk for HIV.

CONCLUSION 6:

Utilization of HIV prevention services may be low in the study population due to the stigma and social consequences associated with testing.

Availability does not translate to access. Availability and access are not always universal. Lack of Access to HIV testing and other prevention services may be a critical issue that causes underutilization of such services within the study population. Access to services does not conform to cultural sensitivity in delivery of services, transportation to services, health and functional literacy, and language. Immigrants, especially women, may not be utilizing HIV prevention services due to stigma, fear of loss of anonymity, fear of social ramifications of taking a HIV test, not being able to ask partners to take the HIV test, and familial networks which act as barriers. The study findings suggest that these issues could prevent the study participants from utilizing HIV prevention services and methods.

Some of these barriers could be common to males and females in the study population. As one participant explained, an Indian female college student carrying a condom (having ready access to a condom) can be considered to be immoral and an Indian male student who carries a condom can be seen to be “interested only in sex” within the study population’s networks. Similarly, taking the HIV test can be considered as a negative implication on “family honor” for both Indian men and women. Researchers must also exercise caution not to stereotype gender expectation in terms of sex. As Hirsch & Higgins (2008) observe, one should not assume that women are always forced into having sex and/or unprotected sex. Variations in conceptualization and expression of sexuality can occur even when inequalities are evident.

Interventions aiming to increase utilization of HIV prevention strategies and services must consider such contrasting barriers that can influence the decision to access and use these

services. These interventions should also design components to involve elders in the families and men in the women's networks to reduce the taboo on using HIV prevention services.

HIV prevention strategies for the study population particularly with respect to HIV testing and condom use should examine the HIV risk related positive deviance present in participant networks (Singhal & Dura, 2009). Individuals in the study population who exhibit positive deviant behaviors in order to reduce their HIV risk should be identified and involved in intervention planning. A multi-pronged approach of providing HIV/AIDS information, encouraging and dissemination positive deviance behaviors while actively addressing strategies to achieve social justice seems to be the logical approach to addressing HIV risk reduction among women. Gender, after all, is only a co-factor which shapes HIV risk for women.

Although this study involves female South Indian college students in the U.S., it is not an esoteric attempt to conduct an ethnography of HIV risk in an exotic/minority community in the U.S.-Mexico borderlands. The contexts of HIV risk with respect to migration examined in this study is relevant to and could be investigated in all recent immigrant groups in the U.S, irrespective of their sending environment. Examining such contexts in different immigrant groups may aid in gaining a better understanding about the role of structural violence with respect to HIV risk of marginalized populations, especially immigrant women. HIV risk behaviors in immigrant populations shape HIV risk in both their sending and receiving environments owing to cyclical and other patterns of migration. The current trends in global migration and the HIV pandemic emphasize the need for more focus on structural issues which place women at high risk for HIV worldwide. The findings from this exploratory study imply the need for taking a broader/global approach to understanding the risk and resilience for HIV among immigrant populations.

FUTURE DIRECTIONS FOR THIS RESEARCH:

This exploratory study is the first stage in a two-stage sequential mixed methods research design in which the first stage serves to elicit information critical to designing the second stage of the research. Mixed methods research design has the advantage of combining the strengths of qualitative and quantitative research methods (Johnson & Onwuegbuzie, 2004). Although the use of mixed method research can be concurrent i.e. conducting quantitative and qualitative research at the same point of time in the study, it usually requires a team to conduct the research (Johnson & Onwuegbuzie, 2004). Given that the current research study was conducted by a single investigator, this qualitative study's findings will be used to design a quantitative study in future to test the external generalizability of the same. A standardized survey instrument used will be developed based on the findings from this exploratory study and will be tested for validity and reliability.

The PI also plans to continue investigating the multiple contexts relevant to the HIV risk and resilience of South Indian female immigrant students within other sub-groups of Indian immigrants in the U.S. These contexts and factors will also be examined with respect to their relevance to the vulnerability and risk for HIV among women belonging to other immigrant groups who arrive from sending environments where HIV/AIDS is socially proximate. One of the main focuses of future research studies that stem from the current study findings will be the effect of structural inequalities on HIV vulnerability, risk and resilience. In particular, the positive deviance approach to HIV risk reduction will be examined in relation to contexts in both the sending and receiving environments of such groups.

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Table 1: Study Sample

Data Collection Method	Data Collection Site	Number of Participants / Sex
Individual in-depth interviews	TX/NM, U.S.A- Mexico Border region	15 / Female
Focus Group interview	TX/NM, U.S.A – Mexico Border Region	6 / Female
Focus Group interview	TX/NM, U.S.A – Mexico Border Region	5 / Male
Key informant interview	TX/NM, U.S.A – Mexico Border Region	6 / 3 Male and 3 Female
Individual in-depth interviews	South India	21 / Female
Focus Group interview	South India	10 / Female
Focus Group interview	South India	10 / Female
Key informant interview	South India	9 / 6 Female and 3 Male

Table 2: Characteristics of the Individual In-depth Interview Participants – U.S.-Mexico Border Region (n=15)

Characteristic	n	%
State of origin in South India		
Andhra Pradesh	10	67
Tamil Nadu	2	13
Karnataka	2	13
Kerala and Tamil Nadu	1	7
Partner Status		
Single	10	67
Live-in boyfriend	2	13
Having a boy-friend	3	20
Pursuing Graduate education	15	100
Resident in border region for less than 1 year	11	73
Sharing an apartment with friends	12	80
Age Range in years	21-28	

Table 3: Characteristics of Female Focus Group Participants – U.S.-Mexico Border Region
(n=6)

Characteristic	n	%
State of origin in South India		
Andhra Pradesh	5	83
Kerala	1	17
Reported Partner Status - Single	6	100
Pursuing graduate education	6	100
Resident in border region for less than 1 year	6	100
Sharing an apartment with friends	6	100
Relatives in the U.S.	5	83
Age range in years	21-24	

Table 4: Characteristics of the Male Focus Group Participants – U.S.-Mexico Border Region
(n=5)

Characteristic	n	%
State of origin in South India		
Andhra Pradesh	5	100
Pursuing graduate education	5	100
Reported partner Status - Single	5	100
Resident in border region for less than 1 year	3	60
Resident in border region for 2 years	2	40
Sharing an apartment with friends	5	100
Age range in years	21-24	

Table 5: Characteristics of the Individual In-depth Interview Participants – Tamil Nadu, South India (n=21)

Characteristic	n	%
Born in South India	19	91
Born in North India and raised in South India	2	9
Partner status		
Single	16	76
Married	3	14
Having a boy-friend	2	9
Pursuing graduate education	12	57
Pursuing undergraduate education	9	43
Living with their family	14	67
Living in student dorms	7	33
Travelled outside of India	3	14
Age range in years	19-26	

Table 6: Characteristics of the Female Focus Group Participants – Tamil Nadu, South India (n=10)

Characteristic	n	%
Born in South India	10	100
State of Origin – Tamil Nadu	8	80
State of Origin – Andhra Pradesh	1	10
State of Origin - Karnataka	1	10
Partner status		
Single	8	80
Married	1	10
Having a boy-friend	1	10
Pursuing graduate education	5	50
Pursuing undergraduate education	5	50
Living with their family	10	100
Never travelled outside of India	10	100
Age range in years	20-25	

Table 7: Characteristics of the Male Focus Group Participants – Tamil Nadu, South India
(n=10)

Characteristic	n	%
Born in South India	9	90
Reported partner Status		
Single	9	90
Having a girl-friend	1	10
Pursuing graduate education	3	30
Pursuing undergraduate Education	7	70
Living with their family	7	70
Never travelled outside of India	10	100
Age range in years	20-25	

Table 8: Data Analysis Map- Main sections of data analysis and emergent themes

Data Analysis Section	Emergent Themes	Units Discussed by Participants
Section 1: Awareness and specific knowledge of HIV/AIDS among female Indian college students in the El Paso, TX-Las Cruces, NM region Data analyzed: From El Paso, TX- Las Cruces, NM region	Awareness and knowledge of HIV/AIDS	Cause
		Mode of transmission
		Prevention methods
		Treatment
	Lack of knowledge /misperceptions pertaining to HIV/AIDS	Mode of transmission
		At-risk groups
		Sexual Orientation
	Socio-cultural norms in relation to HIV/AIDS awareness	Discussion about HIV/AIDS
		Gender expectations
		Marriage and discussion about issues related to HIV/AIDS
Section 2: Perceived individual and community risk among female Indian students in relation to the acculturation process in the El Paso, TX-Las Cruces, NM region Data analyzed: From El Paso, TX- Las Cruces, NM region	Perception risk behaviors in study population	Alcohol and drug use
		Risky sex behaviors
	Environment and HIV risk	Reasons for higher risk for HIV among study population in sending Environment
		Reasons for higher risk for HIV among study population in sending Environment
	Socio-structural class and HIV risk	Social class
		Caste
		“Good family background”
	Marriage and HIV risk	Mode of infection
		Safe sex in marriage
		Trust and HIV risk
		Norms related to infidelity
	HIV testing	Knowledge and attitudes towards HIV testing in the study population
		HIV testing and marriage
		Access to testing
		Utilization of Testing Services
		Consequences of taking the HIV test

Section 3: The interaction between the sending and receiving environments and female Indian students and examination of factors which may influence their HIV vulnerability, risk and resilience as students, immigrants and women Data Analyzed: From El Paso, TX/Las Cruces, NM region, U.S.A and Tamil Nadu, South India	Perception of individual risk for HIV	Reasons for not perceiving risk for HIV
	Norms in sending environment which may interact with norms in receiving environment in relation to HIV risk and resilience	Reasons for not planning to ask for pre-marital HIV
		Migration from South India to the U.S.
		Communication and mobility between two environments
		Socio-cultural norms related to HIV risk in South India and the U.S.
		Gender roles and expectations in South India and the U.S.
		Norms related to HIV testing in both environments
		Norms related to gaining information about sex and HIV/AIDS in both environments
		Issues/topics relevant to HIV/AIDS participants were hesitant or avoided discussing in both environments
	Reported risk behaviors among Indian college students in sending and receiving environments	Alcohol and drug use
		Risky sex behaviors
		Same-sex behaviors and HIV risk
	Advice for an Indian student who is planning to pursue higher education in the U.S.	Cultural norms
		Abstinence from sex
		Safe sex practices
		Alcohol and drug use
		Avoiding infected body fluids
		HIV testing

Table 9: Reported Knowledge of HIV/AIDS among Female South Indian College Students in the U.S

Knowledge of HIV	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
Human Immunodeficiency Virus is the causal agent of HIV/AIDS (Yes)	15	100	6	100
Mode of HIV transmission				
Heterosexual Contact	15	100	6	100
Same-sex relations	2	13	6	100
Infected needles and body fluids	13	87	6	100
Participants reporting no available cure for HIV	15	100	6	100
Participants reporting medications available for prolonging the life of a HIV patient	4	27	6	100

Table 10: Reported Knowledge of HIV Prevention- Female South Indian College Students in the U.S

Knowledge of HIV Prevention methods	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
Participants reporting that HIV is preventable	15	100	6	100
Prevention strategies participants report of being aware of:				
Abstaining from pre-marital sex	12	80	6	100
Observing safe sex practices	12	80	1	17
Using male condoms	11	73	1	17
Heard of female condoms	2	13	1	17
Diaphragms	2	13	0	0
Oral Contraceptive pills	2	13	0	0
Using clean needles	2	13	5	83
Making sure blood transfusion products are not contaminated	3	20	0	0

Table 11: Lack of knowledge, and misperceptions pertaining to HIV transmission among female participants in the U.S.

Theme	Individual interview participants (N=15)		Focus group participants (N=6)	
	n	%	n	%
Lack of knowledge related to HIV transmission				
Lack of awareness of female condoms	13	87	5	83
Lack of awareness of HIV transmission through injection drug use	11	73	6	100
Lack of awareness of transmission of HIV in the perinatal period	10	67	3	50
Reported at-risk groups				
High-socio-economic class	2	13	5	83
Low-socio-economic class	1	7	2	33
Individuals from rural areas in India	1	7	0	0
Individuals with low levels of formal education				
Prevalent misperceptions about HIV transmission				
Possibility of HIV transmission by food contamination	2	13	0	0
HIV infected persons intentionally spreading HIV through infected needles in public venues	5	33	3	50
Misinformation about same sexual orientation				
Belief that a person cannot be bisexual	7	47	0	0

Table 12: Reported socio-cultural norms related to knowledge about sex, sexuality and HIV

Themes	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
Discussion about HIV in social networks				
HIV/AIDS is rarely a topic of discussion with friends/family	15	100	6	100
Only discussed as a social issue	11	73	3	50
Discussed with friends	11	73	3	50
Not discussed with parents				
Terms of discussion of HIV as a social issue				
Sympathy for HIV positive individuals	1	7	3	50
Discussing stigma related to HIV	11	73	3	50
Social norms related to a woman openly talking about HIV/AIDS				
It is not socially acceptable for a woman to talk about HIV/AIDS	14	93	6	100
It is not acceptable by elders in family for a woman to talk about HIV/AIDS	13	87	5	83
It is socially acceptable for a woman who is a health professional to talk about HIV/AIDS	2	13	5	83
Discussion of HIV/AIDS in relation to marriage				
Socially acceptable for a married woman to talk about HIV/AIDS	13	87	5	83
Not acceptable for a married woman to initiate topic about issues related HIV/AIDS	13	87	6	100
Discussion of HIV with husband is usually as a social issues and not personal risk	11	73	3	50
Implications of an unmarried woman talking about issues related to HIV/AIDS				
She is not a “good girl”/ideal Indian woman	14	93	6	100
She has already experienced sexual intercourse	14	93	0	0
She is interested in sex	14	93	0	0

Table 13: HIV Risk Behaviors in Social Networks reported by U.S. participants

Themes	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
Prevalent risk behaviors in study population				
Alcohol use				
Participants reporting prevalence of alcohol use among Indian college students in the U.S.	15	100	6	100
Reported high prevalence of alcohol use among male college students	4	27	6	100
Mixed (male and female) student parties as venue for alcohol use	15	100	0	0
Reported alcohol use among female students	11	73	0	0
Popular type of alcoholic beverage in males				
Beer	5	33	0	0
Whiskey	3	20	0	0
Popular type of alcoholic beverage in females				
vodka	5	33	0	0
wine	3	20	0	0
Participants reporting that alcohol/drug use can affect sexual decision making	15	100	4	67
Drug Use				
Aware of drug use among Indian and other college students in general	5	33	3	50
Aware of prescription drug abuse	1	7	0	0
Unsafe sex				
Participants Reporting prevalence of dating among study population	14	87	2	33
Participants reporting that dating can involve sex	14	87	2	33
Participants reporting prevalent use of contraception in dating	11	73	6	100
Participants reporting that prevention of pregnancy as the main reason for using condoms during pre-marital sex	11	73	6	100
Participants reporting possible prevalence of same-sex behaviors in study population	3	20	0	0
Participants reporting that same-sex relations will be hidden within the study population	3	20	0	0

Table 14: Perceived HIV Risk for Indian Students with Relation to Sending and Receiving Environments

Themes	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
HIV risk is higher for college students in India	4	27	3	50
Reasons for higher HIV risk in India				
• Lack of awareness about HIV/AIDS	2	13	0	0
• Socio-cultural norms which prevent discussion about HIV/AIDS	2	13	0	0
• Preference of men to have sex without condoms	1	7	0	0
• Stress related to being a college student	1	7	3	50
HIV risk for Indian college students is higher in the U.S.	7	47	6	100
Reasons for higher HIV risk in the U.S.				
• Differences in environment	4	27	6	100
• “Freedom” resulting from being away from home/family/society	5	33	6	100
• The lure for conservative students to experiment with risk behaviors	5	33	0	0
HIV risk for Indian college students is equal in India and the U.S.	3	20	0	0
Reasons for equal HIV risk in India and U.S.				
• Depends on individual’s beliefs about engaging in risk behaviors	3	20	0	0

Table 15: Social Class, caste and HIV risk

Participants reporting...	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
Social class is related to HIV risk	2	13	5	83
Formal education level is related to HIV risk	1	7	1	17
Caste and “Good family background” is related to low HIV risk	5	33	6	100
Reported characteristics of “Good family background”				
Education	7	47	6	100
Financial status	5	33	0	0
Status of the family in Indian society	8	53	0	0
Caste	10	67	0	0
Family occupation	2	13	0	0
Prospective groom not having any sexual affairs	2	13	0	0
Absence of divorces in the family	2	13	0	0
“Ethics”	0	0	1	17

Table 16: Marriage and HIV risk

Theme	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	N	%	n	%
Marriage and HIV				
Participants reporting that married women who have sex only with their husbands can still get HIV	14	93	6	100
Ways in which married women can get HIV				
If husband is HIV positive	6	40	1	17
If husband had pre-marital sexual relationships	6	40	0	0
If husband has been infected through unsterile hospital procedures	2	13	0	0
If husband has extramarital sexual relationships	2	13	4	67
If the married woman has multiple sexual partners	5	33	0	0
Attitudes related to safe sex in married relationships				
Use of contraception after marriage is acceptable socially in India	11	73	6	100
The man should initiate discussion about contraception	15	100	0	0
Women can discuss contraception after marriage	11	73	6	100
Participants believing that women should be aware of contraceptive methods	9	60	1	17
Marital problems can occur if woman insists on condom use in a marriage	7	47	0	0
Pre and extra marital sex is socially forgiven for men and not women	15	100	6	100

Table 17: Knowledge, access and utilization of HIV testing in the U.S

Themes related to HIV Testing	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
Reported knowledge and attitudes				
Participants aware of the HIV test	15	100	6	100
Participants reporting that HIV testing is beneficial	15	100	6	100
Participants reporting pre-marital HIV testing should be performed before arranged and love marriages	11	73	6	100
Participants reporting pre-marital HIV testing is not necessary in love-marriages	4	27	0	0
Access to HIV testing				
Participants reporting that access to testing is better in the U.S. in comparison to India	15	100	6	100
Utilization of HIV test				
Participants reporting that stigma to HIV in social network may prevent Indian students utilizing testing services in the U.S.	14	93	6	100
Possible consequences of taking the HIV test				
Circulation of rumors about student's character and behavior	11	73	6	100
Isolation from Indian student social networks	8	53	6	100
Participants reporting that they will help a friend who wants to test for HIV	9	60	6	100

Table 18: Perception of personal risk for HIV by female U.S. participants

Reported perceptions	Individual interview participants (N=15)		Female Focus Group Participants (N=6)	
	n	%	n	%
Participants not perceiving individual risk for HIV	14	93	6	100
Reasons for not perceiving individual risk				
Currently not engaging in sexual intercourse or injection drug use	13	92	6	100
Individual risk for HIV and marriage				
Participants perceiving HIV risk through marriage in future	14	93	0	0
Participants who report they will ask for future partner to take HIV test before marriage	4	27	0	0
Participants planning to have an arranged marriage	11	73	5	83
Reasons for not planning to ask for HIV test before marriage				
Trust in partners	2	13	0	0
Trust that parents will find a groom without HIV risk behaviors	3	20	0	0
HIV testing is not an issue discussed when marriages are arranged	13	93	6	100
Parents and future parents-in-law will not agree for HIV testing before marriage	11	73	6	100

Table 19: Reported patterns in migration and socializing in the sending and receiving environments

Themes	Sending Environment				Receiving Environment			
	Individual Interview Participants (N=21)		Focus Group Participants (N=10)		Individual Interview Participants (N=15)		Focus group Participants (N=6)	
	n	%	n	%	n	%	n	%
Reason cited for migration to the U.S. from India								
Education	21	100	10	100	15	100	6	100
Employment	14	67	10	100	15	100	6	100
Marriage for women	16	76	10	100	15	100	5	100
Socializing activities among participants								
Going out with friends to restaurants/malls/movies	17	81	9	90	14	93	6	100
Student parties	2	10	1	10	7	47	6	100
“Pubbing”/Discotheque	1	5	0	0	2	13	0	0
Dating	3	14	0	0	2	13	0	0
Church/temple	3	14	0	0	1	7	0	0
Long Road Trips	0	0	0	0	2	13	0	0
Living arrangements of participants								
Student dorms	7	33	0	0	0	0	0	0
Sharing an apartment with friends	0	0	0	0	12	80	6	100
Living with family	14	67	10	100	0	0	0	0
Living with boy-friend	0	0	0	0	2	13	0	0

Table 20: Reasons for Choosing Border Region and Patterns in Communication – U.S. participants

Themes	Receiving Environment			
	Individual Interview Participants (N=15)		Focus group Participants (N=6)	
	n	%	n	%
Reason for choosing to come to the local border region				
Lower cost of living, availability of assistantships and warm climate	8	53	6	100
Social Networks				
Participants with social network comprising of students from India and other countries/ethnicities	15	100	6	100
Participants who attend social events/parties with Indian Students only	6	40	5	83
Participants who attend social events/parties with Indian and students from other ethnic groups	9	60	1	17
Communication and mobility				
Participants who contacted individuals in the border region while in India	15	100	6	100
Use online social networking site “Orkut” in India to network with individuals in the U.S. and India	10	67	6	100

Table 21: Traditional Socio-Cultural Norms Related to Sex and Sexuality reported in the U.S. and India

Socio-cultural norm	Sending Environment				Receiving Environment			
	Individual Interview Participants (N=21)		Focus Group Participants (N=10)		Individual Interview Participants (N=15)		Focus group Participants (N=6)	
	n	%	n	%	n	%	n	%
Dating is not accepted	21	100	10	100	15	100	6	100
Pre-marital sex is not socially acceptable in general	21	100	10	100	15	100	6	100
Engaging in pre-marital sex is generally forgiven for men	21	100	10	100	15	100	6	100
Pre-marital sex is prevalent among study population	21	100	10	100	11	73	6	100
Participants indicating that pre-marital sex is wrong	21	100	10	100	12	80	6	100

Table 22: Traditional Gender Roles and Expectations Related to HIV Risk reported in U.S.
and India

Gender roles and expectations	Sending Environment				Receiving Environment			
	Individual Interview Participants (N=21)		Focus Group Participants (N=10)		Individual Interview Participants (N=15)		Focus group Participants (N=6)	
	n	%	n	%	n	%	n	%
Women should not demonstrate knowledge of sex and contraception before marriage	21	100	10	100	14	93	5	83
Demonstrating knowledge about sex, contraception and/or HIV/AIDS before marriage can negatively affect prospects of marriage for an Indian woman	21	100	10	100	13	87	5	83
In general, the man is expected to initiate discussion related to sex and HIV/AIDS before marriage	21	100	10	100	15	100	6	100
Initiation of discussion about sex/contraception by a woman after marriage can cause mistrust in a marriage	14	67	9	90	4	27	0	0
Pregnancy before marriage is socially stigmatized/unacceptable	21	100	10	100	15	100	6	100
Some form of contraception will be used during pre-marital sex in study population	7	33	10	100	8	53	0	0

Table 23: Reported Norms Related to HIV Testing

Norms related to HIV testing	Sending Environment				Receiving Environment			
	Individual Interview Participants (N=21)		Focus Group Participants (N=10)		Individual Interview Participants (N=15)		Focus group Participants (N=6)	
	n	%	n	%	n	%	n	%
Taboo related to sex and HIV can prevent individuals from getting tested for HIV	21	100	10	100	15	100	6	100
Taking the HIV test can negatively affect a woman's prospect of getting married	21	100	10	100	15	100	6	100
Access to HIV testing is better for Indian students in the U.S. owing to more anonymity	21	100	10	100	15	100	6	100
Fear of isolation by Indian student networks will prevent an Indian student to take the HIV test in the U.S.	21	100	10	100	14	93	6	100

Table 24: Reported Norms Related to HIV/AIDS Prevention Education

Norms related to communication about HIV/AIDS	Sending Environment				Receiving Environment			
	Individual Interview Participants (N=21)		Focus Group Participants (N=10)		Individual Interview Participants (N=15)		Focus group Participants (N=6)	
	n	%	n	%	n	%	n	%
HIV is rarely discussed in social networks	15	72	7	70	15	100	6	100
HIV is discussed only as a social issue and not a personal risk	21	100	10	100	11	73	3	50
Parents rarely discuss sex and HIV with children	19	91	9	90	11	73	4	67
College students gain information about HIV mainly from the media(internet)	12	57	10	100	8	53	5	83
College students rarely utilize printed information about HIV available on campus	11	52	7	70	12	80	6	100
An interactive seminar would be the best way to provide HIV/AIDS education	8	38	10	100	6	40	6	100

Table 25: Currently Reported Risk Behaviors within Participants' Networks

Factor	Sending Environment				Receiving Environment			
	Individual Interview Participants (N=21)		Focus Group Participants (N=10)		Individual Interview Participants (N=15)		Focus group Participants (N=6)	
	n	%	n	%	n	%	n	%
Alcohol and drug use								
Alcohol use	21	100	10	100	14	93	4	67
“Pubbing” is a common activity	11	52	10	100	6	40	4	67
Drug use	4	19	1	10	5	33	3	50
Reported drugs	Ganja, heroin, brown sugar, abin, dope, Benadryl, Inhalants- whitener				Weed, marijuana, pills, cough syrup			
Sexual Risk behaviors								
Dating involves sex	18	86	4	40	8	93	2	33
Contraception use may not always involve condoms	7	33	10	100	8	93	0	0
Same-sex Behaviors								
Same-sex behaviors are often hidden	16	76	4	40	3	67	3	50

Table 26: Reported Advice to a Friend or Relative who is planning to Pursue Higher Education in the U.S

Advice to friend/relative who is planning to pursue higher education in the U.S.	
From female Students in South India N= 31: n (%)	From female Students in the U.S. N = 21: n (%)
To not engage in “wrong practices” [sex]: 18(58)	To protect themselves from HIV: 13(62)
To not use drugs: 12(39)	To utilize safe sex practices: 7(33)
To not forget the Indian culture: 11(36)	To avoid pre-marital sex: 3(14)
To not use alcohol/frequent parties where alcohol is served: 4(13)	To go to the student health center and learn about HIV/AIDS: 1(5)
To “Be careful” : 6(19)	To get tested for HIV: 1(5)
To be careful about getting a blood transfusion or injections at a clinic: 2(6)	To “be very careful” about getting a blood transfusion: 1(5)
To use a condom if one decides to have sex: 3(10)	There is no need to advise because women “like ourselves” cannot get HIV sexually: 6(29)
To get tested for HIV before engaging in sex: 1(5)	
To get tested for HIV every five years: 1(5)	
To not to have sex before marriage, but if one decided to, he or she must use condoms: 1(5)	
“If we are correct...one girl-one boy, we cannot get HIV”: 1(5)	
“Maintain a distance [with members of the opposite sex], do your work, come back.” :1(5)	

Table 27: Issues not mentioned by female participants in the U.S. and South India without probing (n=52)

Marriage as a risk for HIV/AIDS
Same-sex behavior in relation to heterosexual marriages
Female condom
Types of sexual intercourse other than vaginal intercourse
Direct reference to, or use of the word “sex”

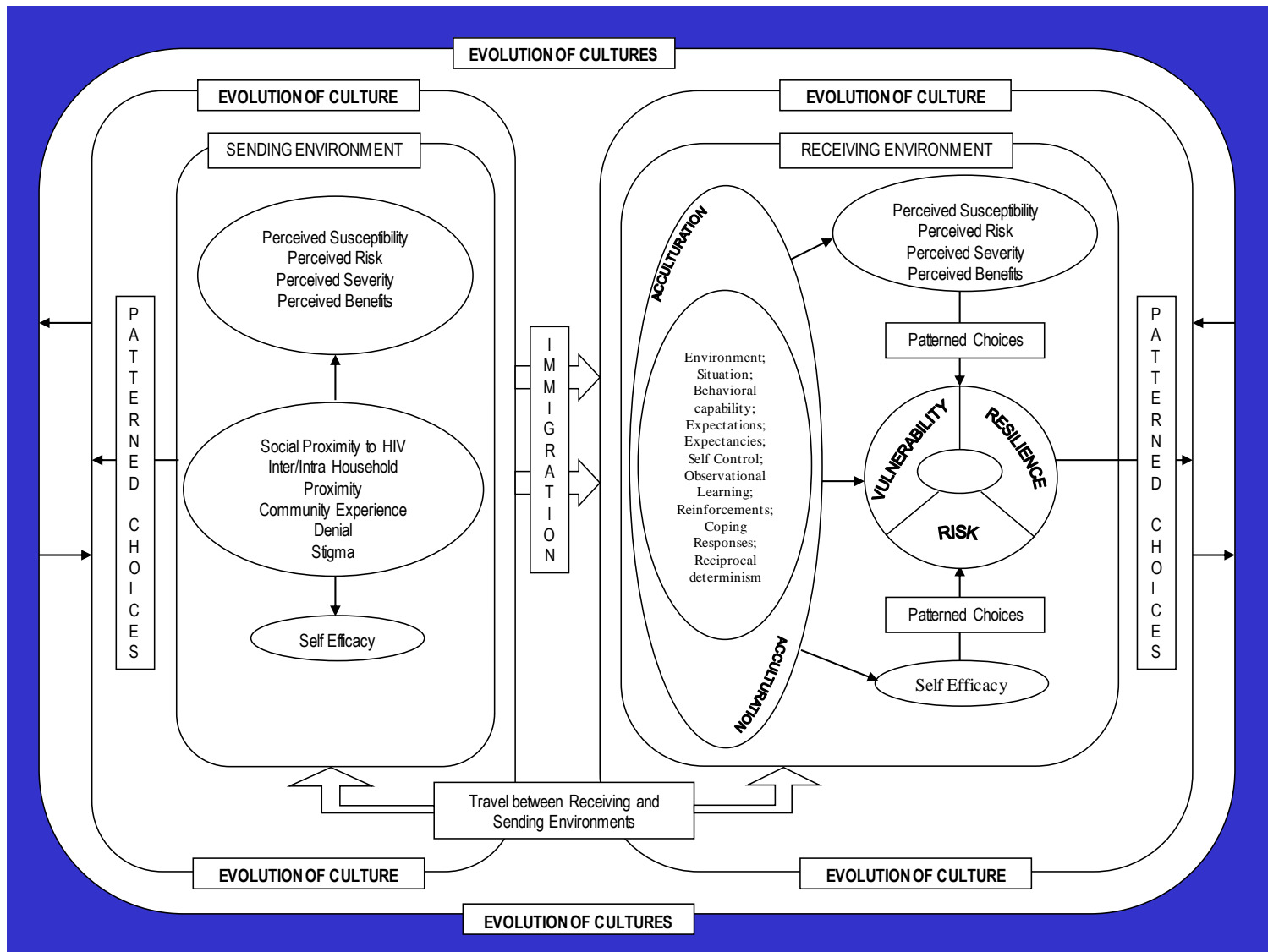
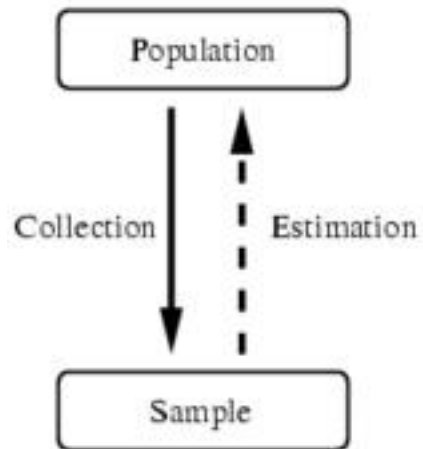


Figure 2: Conceptualization of the Theoretical Framework guiding the current study

Ordinary sampling



Respondent-driven sampling

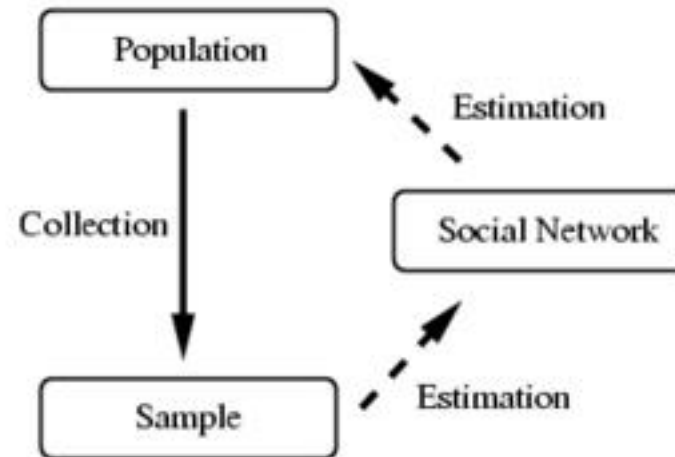


Figure 3: Respondent Driven Sampling

Source: Salganik, M. (2007) Available at <http://www.columbia.edu/~mjs2105/rds.html>

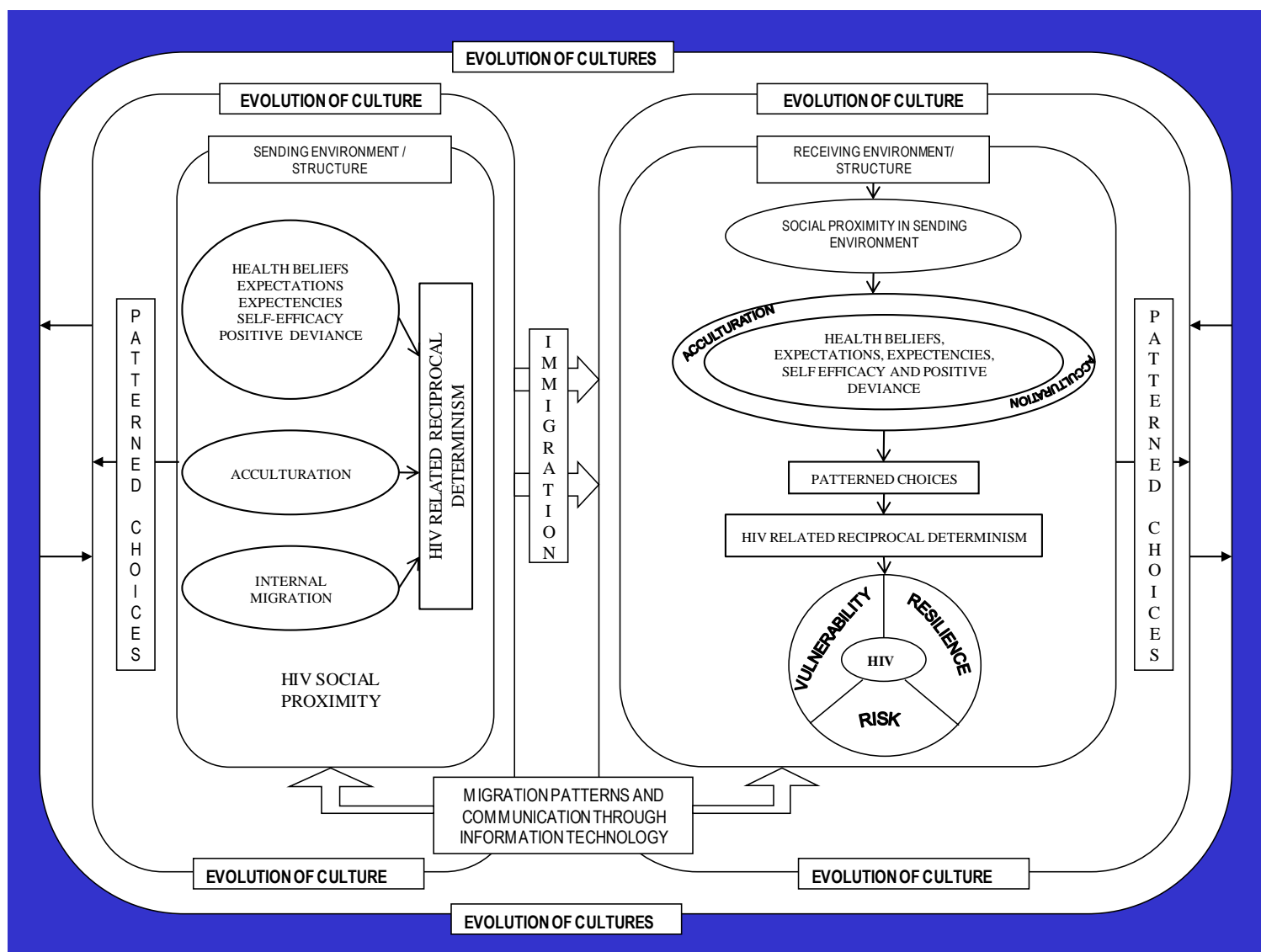


Figure 4: Application of study findings to guiding theoretical framework – A model for HIV vulnerability, risk and resilience in recent immigrants

APPENDIX A

Awareness and Knowledge of HIV/AIDS among Female Indian University Students in

South India and as immigrants in the U.S.-Mexico Border Region

FOCUS GROUP GUIDE: MALE INDIAN STUDENTS

Standardized Mini-questionnaire

Age

Education Level

Place of Primary Residence

Major

Living with

Partner Status

Partner Race/Ethnic Origin/Nationality

No. of years in the U.S.

Purpose of migration to the U.S.

Place of Origin in India

Focus Group questions

1. What is HIV?
2. Who can get HIV?
3. Where do students like yourselves get information about HIV/AIDS?
4. Can HIV be cured?
5. Do men in your network (friends & relatives) talk about HIV/AIDS? If so, what do they say?
6. Who can get HIV more...men or women? Why?
7. How can a person get HIV?
8. How can a woman get HIV?
9. Risk Behavior of women in your network
10. Can persons like yourselves (students) get HIV? How?
11. What have you heard about alcohol use among students (men and women)? (Probe frequency, venues of use, gender, perceptions of use among women)
12. What have you heard about drug use among students like yourselves?
13. How is drug and alcohol use related to HIV/AIDS?
14. Dating among students
15. Sexual relationships among students (perceptions about gender norms and heterosexual and homosexual relationships)
16. Do you think same-sex behaviors are riskier in terms of getting HIV?
17. Do you think that Indian students are more likely to engage in same-sex behaviors while in India or in the U.S.? Why?

18. Does practicing safe sex (using condoms) mean that there is no trust and/or respect between partners? Why?
19. Does practicing safe sex mean that the relationship is casual? Why?
20. Is it easier for a person to get HIV in India or in the U.S.? Why?
21. Why do people want to go to the U.S.?
22. What would you say about HIV/AIDS to a friend/relative/son or daughter who will be attending college?

For male university students in EL Paso TX:

Repeat Questions 1 to 19

20. Why do people come to the U.S. from India?
21. How is dating different here and in India?
22. How is a student's social life different here in the U.S.?
23. How do men like yourselves think about Indian women who are students here in the U.S.?
24. Do Indian men who are students in the U.S. date only India women? Why?

APPENDIX B

Awareness and Knowledge of HIV/AIDS among Female Indian University Students in South India and as immigrants in the U.S.-Mexico Border Region

INDIVIDUAL INTERVIEW GUIDE FOR FEMALE STUDENTS: CHENNAI, INDIA

Standardized Mini-questionnaire

Interview Number _____

Interview Site _____

Date _____

Length of Interview _____

Age _____

Partner Status _____

Place of Birth _____

Educational Level _____

Family members _____

Years of residence in Chennai _____

Ever traveled outside of India _____

Lived Abroad _____; Where _____

-
1. Do women in your social network ever talk about HIV/AIDS? If so, what do they say?
 2. What is HIV?
 3. What is AIDS?
 4. How is HIV transmitted?
 5. Can HIV/AIDS be cured?
 6. What do you know about medications to treat AIDS?
 7. Do you personally feel at risk? Why or why not?
 8. If a woman has safe sex (uses condoms) with her partner, does it mean that there is no trust in that relationship? Why/How? Does it also mean that the woman does not respect her partner?
 9. Does having safe sex i.e., using a condom mean that the relationship is causal? Why?
 10. Do you know anyone who lives with HIV or AIDS?
 11. Do you know anyone who has died of AIDS or an AIDS related illness?
 12. According to you, what are the types of activities/behavior which would lead to people getting HIV?
 13. Is there any difference between activities/behaviors through which men and women get HIV?
 14. Do you think same-sex behaviors are riskier in terms of getting infected with HIV?
 15. Do you ever engage in same-sex behavior?
 16. Can women openly discuss about HIV/AIDS with their family in India? Why/How?
 17. Can women openly talk about HIV/AIDS with their husbands/friends? In what context?

18. According to you, how does the society here sees a woman who openly talks about sex or HIV? Why?
19. Is it OK for men in India to talk openly about sex? Why do you think so?
20. What is dating?
21. Does everybody in Chennai go for dates? Why?
22. Is dating considered acceptable for both men and women? Why?
23. How about the different castes and classes (upper, middle and lower)...is there any difference in the way dating is seen for people in different castes?
24. According to you, do men/women of any particular class/caste engage more in dating? Why do you think so?
25. What characteristics, according to the Indian culture and society make up an ideal woman?
26. Do men and women in Chennai drink alcohol?
27. What are the occasions when alcohol is consumed by men and women in Chennai? Where do they usually have alcohol?
28. Is it considered OK for men and women to drink alcohol?
29. In general, how is a woman who has alcohol in a public place viewed by society? Why?
30. How about drug use...do you know if men and women use drugs, especially those drugs which are injected into the veins?
31. What types of drugs have you heard about that men and women use? How about prescription drugs?
32. According to you, in general, who would start the topic about contraception: the man or the woman? Why?
33. What is contraception/birth control? Please tell me about any contraceptive methods that you are aware of.
34. According to you, who practices/used birth control (married/unmarried women, college students etc.)
35. In general, is it OK for men /women to have sex before they get married? Why?
36. According to you, is it OK for men and women to have sex before they get married? Why?
37. In general, do you think men and women in India have sexual relationships before they get married? Why?
38. Can married women who have sex only with their husbands get HIV?
39. Where do boys and girls get their information about sex/sexually transmitted infections?
40. In general, do parents talk about sex/sexually transmitted infections such as HIV with their children? If yes, at what age?
41. Where do most people in Chennai/India get information about HIV, other sexually transmitted infections, and contraception?
42. Where did you get information about sex and sexually transmitted infections?
43. What do you know about getting tested for HIV?
44. According to you, who should get tested for HIV? Why?
45. Can women and men openly go to testing centers in Chennai and get tested?
46. In general what do people think about persons who get tested for HIV?
47. According to you, is there a taboo for getting tested for HIV? Is this taboo different in anyway for men and women in India? Why?

48. According to you, why do people go /immigrate/move to other countries such as the U.S.?
49. Would you like to immigrate /travel to the U.S. sometime in future? Why?
50. Do you think it is easier to get HIV here or in the U.S.? Why?
51. Where do you think you could get information about HIV/AIDS here?
52. What would you say to a friend, relative, daughter or son about AIDS as they left for college?

APPENDIX C

Awareness and Knowledge of HIV/AIDS among Female Indian University Students in

South India and as immigrants in the U.S.-Mexico Border Region

INDIVIDUAL INTERVIEW GUIDE FOR FEMALE STUDENTS: U.S.-MEXICO BORDER (EL PASO, TX/LAS CRUCES, NM)

Standardized Mini-questionnaire

Interview Number _____

Interview Site _____

Date _____

Length of Interview _____

Age _____

Partner Status _____

Place of Birth _____

Educational Level _____

Family members in the U.S. _____

Years of residence in the Border Region _____

Primary reason for immigration from India to the U.S. _____

Place of residence _____; Living with _____

Living in ☐ Student Dorm ☐ sharing an apartment with friends ☐ with family ☐ live in partner ☐ spouse ☐ Other _____

1. Why did you come to the U.S. ?
2. Do you like living in the Border Region? Why? Why not?
3. Did you experience any stress while moving to the U.S. or during the beginning of your stay here? Please explain?
4. How did you deal with the stress of moving from India to the U.S.
5. Did you know anybody from India here before you moved to the U.S.?
6. How did you get to know people after getting here?
7. Are your friends mostly from India?
8. Do you have Mexican American friends with whom you socialize/go out with? Why not?
9. What according to you is the main difference between the group of friends you have here and the friends you had when you were living in India?
10. Do women in your social network ever talk about HIV/AIDS? If so, what do they say?
11. How about men in your social network? Do they talk about HIV/AIDS? If so what do they say?
12. Do men and women in your network talk together about HIV/AIDS and sex? If yes what? If no, why do you think they don't?
13. As a woman, do you feel that you can talk more openly about sex and HIV/AIDS in the U.S., compared to in India? Why? How?
14. What is HIV?
15. What is AIDS?

16. How is HIV transmitted?
17. Can HIV/AIDS be cured?
18. What do you know about medications to treat AIDS?
19. Do you personally feel at risk? Why or why not?
20. Do you know anyone who lives with HIV or AIDS?
21. Do you know anyone who has died of AIDS or an AIDS related illness?
22. According to you, what are the types of activities/behavior which would lead to people getting HIV?
23. Is there any difference between activities/behaviors through which men and women get HIV?
24. Do you think same-sex behaviors (men having sex with men/women having sex with women) are riskier in terms of getting HIV? Why?
25. Clearly, U.S. sexual norms are much more restrictive than our/Indian culture. Do you think that same-sex behaviors would be more common among Indian students in the U.S. or in India? Why?
26. Do you ever engage in same-sex behaviors?
27. What is dating?
28. Does everybody in your social network here go for dates? Who? Why?
29. Is dating considered acceptable in your social network for both men and women from India? Why?
30. Do you know if the male or female students from India who are studying here date? Is there any difference in who dates more: men or women from India?
31. How about the different castes and classes (upper, middle and lower)...is there any difference in the way dating is seen for people who belong to different castes in India? Is the caste system considered when women and men from India date here? How about religion and nationality?
32. According to you, do men/women of any particular class/caste engage more in dating? Why do you think so?
33. Did you date while you were living in India? Do you date now?
34. If a woman has safe sex (uses condoms) with her partner, does it mean that there is no trust in that relationship? Why/How? Does it also mean that the woman does not respect her partner?
35. Does having safe sex i.e., using a condom mean that the relationship (if not married) is causal? Why?
36. What characteristics, according to the Indian culture and society make up an ideal woman?
37. According to you, how do the above characteristics change/apply to an Indian woman living/studying in the U.S.?
38. Do men and women (students) in your social network drink alcohol?
39. What are the occasions when alcohol is consumed by Indian students here? Where do they usually have alcohol?
40. Is it considered OK for both male and female students from India to drink alcohol?
41. Do you know if the students who consume alcohol while in the U.S., do the same while living in India? (if no, why do you think they are drinking alcohol now?)
42. In general, how is a woman from India who has alcohol in a public place viewed within your social network here? Why?

43. How about drug use...do you know if the students from India use drugs, especially those drugs which are injected into the veins? How about students from other countries?
44. What types of drugs have you heard about that Indian students use here? What about prescription drugs?
45. How does having alcohol affect a person's sex behavior?
46. According to you, in general, who would start the topic about contraception: the man or the woman? Why?
47. What is contraception/birth control? Please tell me about any contraceptive methods that you are aware of.
48. According to you, who practices/used birth control (married/unmarried women, college students etc.)?
49. In general, what do you know about contraception/safe sex practices among students here (Indian students?)
50. In general, is it OK for men /women to have sex before they get married? Why?
51. According to you, is it OK for men and women to have sex before they get married? Why?
52. In general, do you think men and women in India have sexual relationships before they get married? Why? Is it any different for students from India who are living here? Why?
53. Can married women who have sex only with their husbands get HIV?
54. Where do you and your fellow students get their information about sex/sexually transmitted infections and contraception?
55. Do you think it is necessary for you to know about sexually transmitted infections such as HIV and contraception at this stage in your life? Why? Why not?
56. What do you know about getting tested for HIV?
57. According to you, who should get tested for HIV? Why?
58. Can women and men from India openly go to testing centers in El Paso and get tested?
59. In general what do people in your social network think about persons who get tested for HIV?
60. According to you, is there a taboo for getting tested for HIV within your social network? Is this taboo different in anyway for men and women? Why?
61. In general, is it easier for an Indian woman to go and get tested for HIV over here or in India? Why/How?
62. Do you think it is easier to get HIV here or in India? Why?
63. What would you say to a friend, relative, daughter or son about AIDS who just arrived from India to attend college in the U.S.?

APPENDIX D

Awareness and Specific Knowledge of HIV/AIDS among Female Indian University

Students in South India and as immigrants in the U.S.-Mexico Border Region

FOCUS GROUP GUIDE: FEMALE STUDENTS, CHENNAI, INDIA

Focus Group Mini-Questionnaire

Interview Site _____

Date _____

Length of Interview _____

Age _____

Partner Status _____

Place of Birth _____

Educational Level _____

Family members _____

Years of residence in Chennai _____

Ever traveled outside of India _____

Lived Abroad _____; Where _____

Interview Guide Questions

1. What is HIV?
2. How do people get HIV/AIDS?
3. What is AIDS?
4. Can HIV be cured?
5. Please tell me about any treatment you know of for HIV/AIDS?
6. Who can get HIV?
7. How can women get HIV?
8. In general how to people think about women who get HIV (HIV positive)? Why?
9. Can women like yourselves (students) get HIV? How?
10. Do women in your social network talk about HIV/AIDS? If yes, what do they say?
11. Do women who are students like yourselves consider themselves at risk for HIV? Why? Why not?
12. Do women/students who are not married have sexual relationships?
13. In general, how do the families/parents of women (students) who date feel about dating/relationships etc.. (Perceptions about dating, being friends with members of the opposite sex; premarital sex..to be probed).
14. How about women/students who are married? Do they have sexual relationships with others?

15. How about same-sex (men having sex with men/women having sex with women) behaviors? Do you think that it is more likely for Indian students to engage in same-sex behaviors in India or while in the U.S.? Why?
16. Can a woman who has sex with only one partner get HIV? How? Why not?
17. Can a married woman who has sex with only her spouse get HIV? How? Why not?
18. Please tell me about alcohol and drug use among students here in Chennai? (Frequency, types, venues etc. to be probed)
19. Please tell me about what you know about sexual activities taking place among students during college parties, hostel parties etc... What role does alcohol and drugs play in these parties?
20. Do women like yourselves (students) use contraception (condoms, birth control)? Do you think they use contraception for preventing pregnancy or for not getting any sexually transmitted diseases? Probe about termination of pregnancies among students.
21. Does practicing safe sex (using condoms) mean that there is no trust between partners? Why?
22. If a partner wants to use condoms does it mean that the relationship is casual? Why?
23. Where do students like yourselves get information about HIV?
24. How easy is it for a woman like yourself (student) to go and get tested for HIV? Please tell me about any problems a woman can have in going to a HIV testing center, and getting tested.
25. How do men (students in particular) think about female students who openly talk about sex, safe sex and HIV? Why?
26. In general, do you think it is easier for a woman to get HIV over here in India or in the U.S.? Why?

APPENDIX E

Awareness and Knowledge of HIV/AIDS among Female Indian University Students in

South India and as immigrants in the U.S.-Mexico Border Region

FOCUS GROUP GUIDE: FEMALE STUDENTS, U.S.-MEXICO BORDER (EL PASO, TX/LAS CRUCES, NM)

Focus Group Mini-Questionnaire

Interview Site _____

Date _____

Length of Interview _____

Age _____

Partner Status _____

Place of Birth _____

Educational Level _____

Family members in the U.S. _____

Years of residence in the Border Region _____

Primary reason for immigration from India to the U.S. _____

Place of residence _____; Living with _____

Living in ☐ Student Dorm ☐ sharing an apartment with friends ☐ with family ☐ live in partner ☐ spouse ☐ Other _____

Interview Guide Questions

1. Why do people come from India to the U.S.?
2. How do people feel when they first arrive in the U.S. as students?
3. What are the issues which students like yourselves, particularly women have to face when they first come to the U.S.?
4. How do students such as yourselves make friends when they come to the U.S.?
5. Do women (students) like yourselves seek out only persons from India to be friends or do they also make friends with students of other nationalities? Why?
6. How about being friends with men? Is it generally OK for women like yourselves to be friends with men (students)? If yes, should these men be only from India?
7. Please tell me about dating activities among students /women like yourselves (Probe into partners, perceptions of dating compared to in India and effect of caste /religion on dating)
8. What would the families/parents of students like yourselves in India think of their children dating in the U.S.? (Probe into socio-cultural and gender expectations)
9. In general what is different about being a women attending college in the U.S. when compared to the same in India? (Probe the contextual factors of student life)

10. What is HIV?
11. How do people get HIV/AIDS?
12. What is AIDS?
13. Can HIV be cured?
14. Please tell me about any treatment you know of for HIV/AIDS?
15. Who can get HIV?
16. How can women get HIV?
17. In general how do people think about women who get HIV (HIV positive) (in India & U.S.)? Why?
18. Can women like yourselves (students) get HIV? How?
19. Can a woman who has sex with only one partner get HIV? How? Why not?
20. Can a married woman who has sex with only her spouse get HIV? How? Why not?
21. Do women in your social network talk about HIV/AIDS? If yes, what do they say?
22. Do women who are students like yourselves consider themselves at risk for HIV? Why? Why not?
23. Do women/students from India who are not married have sexual relationships?
24. Please tell me what you know about the sexual activities of Indian men who are currently students in UTEP.
25. Do you think that same-sex behaviors (men having sex with men/women having sex with women) are riskier in term of getting HIV? Why?
26. Do you think that Indian students are more likely to engage in same-sex behaviors while in India or in the U.S.? why?
27. Please tell me about alcohol and drug use among Indian students here in UTEP? (Frequency, types, venues etc. to be probed)
28. Please tell me about what you know about sexual activities taking place among students during college parties, hostel parties etc... What role does alcohol and drugs play in these parties?
29. Please tell me what you know about the abuse of prescription drugs among students here.
27. Do women like yourselves (students) use contraception (condoms, birth control)? Do you think they use contraception for preventing pregnancy or for not getting any sexually transmitted diseases?
28. Does practicing safe sex mean that there is no trust or respect among partners? Why?
29. Does practicing safe sex (using condoms) mean that the relationship is casual? Why?
30. How do men (students in particular) think about female students who openly talk about sex, safe sex and HIV? Why?
31. In general, do you think it is easier for a woman to get HIV over here in India or in the U.S.? Why?

CURRICULUM VITAE

Thenral Mangadu is a medical doctor from India with a graduate degree in Public Health (MPH) from the University of Texas at Houston Health Sciences Center, School of Public Health. She joined the Interdisciplinary Health Sciences Ph.D program in 2006. Her thesis study towards the MPH degree titled: “Saying No? Factors Associated with reduced uptake of the prenatal HIV test” is a cross sectional study which probed the barriers to HIV testing among women attending a prenatal clinic in El Paso, TX. Thenral Mangadu has been practicing as an internal and external program evaluator/evaluation researcher in the U.S.-Mexico border region for the past decade.

She has been the recipient of the Cotton Memorial Scholarship and the University of Texas at El Paso College of Health Sciences Dissertation funding award. Thenral is currently the Research Associate for the Office for Undergraduate Studies(OUS) at the University of Texas at El Paso, and oversees the design and implementation of assessment and evaluation research for the eight programs and departments which constitute the OUS.

Her research experience includes an internship in de-addiction medicine at the Institute of Mental Health, Chennai, India, certification through the United Nations De-addiction Training Program for Medical Professionals, and conducting HIV prevention research and program evaluation research in the U.S. –Mexico border region. She has published her research in peer-reviewed journals such as the Journal of Immigrant Health and Health Promotion Practice. Thenral Mangadu has also presented her research at conferences such as the American Public Health Association conference in 2008 and the 11th World Congress in Public Health in 2006.

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