PREDICTORS OF HIGH RISK SEXUAL BEHAVIORS IN DEPORTED
MALE MEXICAN MIGRANTS

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DEDICATION

I dedicate this thesis to my amazing friends and family that have supported me through this entire process. I would also like to thank all of my committee members, especially Dr. Carol Sipan, for all of the time and efforts that they have put into helping me complete my thesis.
ABSTRACT OF THE THESIS

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by
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Deported Mexican migrants are a disadvantaged population with unique risk factors for HIV infection. Studies suggest that Mexican migrants frequently engage in sexual risk behaviors, such as unprotected sex and a high number of sexual partners. A previous study using similar methods and study population to those described in this paper found rates of HIV to be lower in Mexican migrants than the general United State’s (US) population. However the relatively high prevalence of HIV risk behaviors among Mexican migrants could result in the rapid spread of HIV, once the virus is introduced into this population. In order to design and implement effective prevention efforts, the determinants of sexual risk behavior in this population must first be identified. The purpose of this paper is to assess the relative contribution to variance in sexual risk behaviors by individual and environmental factors selected on the basis of the Behavioral Ecological Model. Data were collected from a sample of deported Mexican migrants selected on the basis of a probability sampling design from August to November 2009. Analyses were conducted on 353 male participants who (1) had been in the US for at least 24 hours during the 12 months prior to the interview, and (2) reported having sex during that time in the US. Backwards step-wise multiple linear regression models were used to test the association for 20 independent variables that would account for the most variance in the high risk sexual behavior index with the most parsimonious model. The final model included eight independent variables: age, marital status, level of education, English speaking, self-reported level of HIV risk, sex while under the influence of illicit drugs in the last 12 months in the US, condom use social norms, and sex partner social norms. The model explained 14.4% of the variance in high risk sexual behavior. Findings suggest that self-reported level of HIV risk was the strongest predictor of high risk sexual behavior while in the US. Results were partially explained by the BEM, but additional research is necessary to explain a higher proportion of the variance in sexual risk behavior in order to design risk reduction interventions.
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CHAPTER 1

BACKGROUND

MEXICAN MIGRANTS

Mexican migrants are the largest group of migrants currently migrating to the US, with California being the top receiving state (Lee, 2010). Obtaining exact calculations on the total number of migrants from Mexico into the US is difficult, due to high rates of illegal entry. The Department of Homeland Security estimates that 10.8 million immigrants who entered the US illegally were residing in the US in 2009 (Hoefer, Rytina, & Baker, 2009). The persistent lack of available jobs and presence of low wages in Mexico, and the nine-fold increase in wages available to migrants in the US combine to create a strong driving force for both legal and illegal emigration to the US (National Intelligence Counsel, 2001). In 2009 there were 495,582 illegal Mexican migrants apprehended in the US-Mexico border region, indicating the presence of a large, rotating population of migrants entering and being deported (U.S. Customs and Border Protection, 2010).

Migrants encounter stressors, such as a complete change in social environment, social isolation, language difficulties, and economic instability. When migrants illegally enter the US, they are exposed to environmental stressors, such as those previously listed, similar to legal migrants, but compounded by increased stress and instability from the fear of deportation and inability to reliably obtain information and assistance. They are often separated from their family, and suffer mistreatment from labor contractors and business owners who hire illegal workers (Apostolopoulos et al., 2006; Denner, Organista, Dupree, & Thrush, 2005). Many illegal migrants from Mexico are required to pay “coyotes” increasing amounts of money to be smuggled into the US, many times spending all of their savings on the trip. This, in turn, increases the pressure to succeed and stay in the US (Roberts, Hanson, Cornwell, & Borger, 2010). When illegal Mexican migrants have been apprehended by Homeland Security and repatriated back to the northern Mexican border region, they can experience additional feelings of stress, instability and helplessness, particularly if they lack family ties in the border region (Bronfman, Leyva, Negroni, & Rueda, 2002). Under illegal
migration conditions, use of alcohol, other drugs and sex with partners in the U.S. is likely to be more reinforcing (Fernández et al., 2004). Deported Mexican migrants are therefore a unique sub-group of Mexican migrants with risk factors that may make them more likely to participate in harmful activities placing them at higher risk of acquiring sexually transmitted infections and other sources of morbidity, and if infected, to spread infections on both sides of the U.S./Mexican border if constantly immigrating into the US and being deported out of the US.

**HIV in Mexican Migrants**

HIV prevalence in Mexico is considered to be “low prevalence, high risk” at 0.38%, but the level of risk in each Mexican state varies greatly by region (Brouwer et al., 2006; CENSIDA, 2011). Baja California, which borders California to the north, has the third highest incidence of HIV in Mexico (201/100,000); the first and second highest incidence are found in the Distrito Federal (271,100,00) and Guerrero (206/100,000) respectively (CENSIDA, 2011). Tijuana, the largest city in Baja California, accounts for half of the population within the state, suggesting that a large proportion of new HIV cases are concentrated within Tijuana (Brouwer et al., 2006). Subgroups within Tijuana and other border cities, including female sex workers and injection drug users, have been found to have elevated rates of HIV (Brouwer et al., 2006; Strathdee et al., 2008). Thirty-seven percent of migration between the US and Mexico occurs through the city of Tijuana, suggesting that Mexican migrants may be at higher risk of exposure to HIV through encounters with high-risk populations during their migration process (Secretaría del Trabajo y Previsión Social, 1999). Thus, Mexican migrants are subject to increased risk for HIV infection during the migration process. Previous findings indicate that returning male Mexican migrants may act as mechanisms for introducing HIV into rural populations otherwise not exposed to the virus (Bastos, Cáceres, Galvão, Veras, & Castilho, 2008). For example, a history of migration to the US was present in 20.5% and 20.6% of HIV cases in two Central Mexico states, Michoacan and Zacatecas respectively (Magis-Rodríguez et al., 2004).

At 0.6%, the overall prevalence of HIV in the U.S. is higher than that of Mexico (Central Intelligence Agency, 2011). The United States’ HIV cases are concentrated in men who have sex with men (MSM), which accounted for 61% of the HIV incidence in 2009
Young men who have sex with men were the only risk group in the US to have an increased incidence of HIV from 2006-2009 (Prejean et al., 2011). In 2009, Latinos and Hispanics had the second highest incidence of HIV by racial group (0.094), and rates of new infections were 2.9 times those of Whites (Prejean et al., 2011). Young Hispanic men who have sex with men are an at-risk group, and accounted for 72% of new infections in Hispanic males, ages 13-29 (Prejean et al., 2011). Hispanics account for 16% of the U.S. population, but account for 20% of new HIV cases (Centers for Disease Control and Prevention: Division of HIV/AIDS Prevention, 2011b). U.S. Hispanics are disproportionately affected by HIV/AIDS and Mexican migrants traveling to the US may be exposed to the same pre-disposing conditions putting this population at greater risk.

Previous studies of Mexican migrants have found high rates of HIV risk behaviors occurring in the US and Mexico, but fairly low rates of HIV (Apostolopoulos et al., 2006; Martínez-Donate et al., 2005; Rangel et al., 2006). A recent study of HIV prevalence within Mexican migrants found that less than 0.1% of a sample of 1,041 Mexican migrants had HIV, a lower prevalence than that of the general populations in both the US and Mexico (Martínez-Donate et al., 2005). Although rates of HIV in Mexican migrants have been found to be low, due to the higher frequency of sexual risk factors within the migrant population, there is potential for rapid spread of the virus if introduced into this population. In fact, HIV prevalence in the sample presented here was found to be 0.80% in male deported Mexican migrants, but has yet to be published (Martinez-Donate et al., 2011).

**HIV Risks Among Deported Migrants**

Along the northern border of Mexico there are at least three different types of migrants: (1) migrants who have recently left their sending communities within Mexico and have traveled north to the border region, (2) migrants who are migrating from one border region into another border region, and (3) migrants who have migrated south from the US into Mexico either voluntarily or involuntarily, e.g. through deportation (Martínez-Donate et al., 2005). Prevalence of HIV risk behaviors are likely to vary depending on where the migrant is in the migration process (Martínez-Donate et al., 2005). Migrants who recently left their sending communities reported more unprotected sex and sexual acts, while migrants migrating within the border region or migrating from the US into Mexico were more likely to
report sex with casual or multiple sex partners, non-consensual sex, sex with IV drug users, survival sex, and sex with transvestite men (Rangel et al., 2006). Deported Mexican migrants were found to have unique risk factors. Mexican migrants apprehended by Homeland Security may lack social support networks, adequate housing, or monetary resources that could have prevented their apprehension, which may put them at greater risk of acquiring HIV than those who had legally migrated or those illegal migrants that were not deported. A history of deportation has been found to be independently associated with a four-fold increase in the odds of an HIV infection and less access to medical or treatment services in injection drug-using populations (Brouwer et al., 2009; Strathdee et al., 2008). A larger proportion of deported Mexican migrants reported a history of STIs than other migrant populations passing through Tijuana (Martínez-Donate et al., 2005). Additionally, past research has suggested that transborder mobility is associated with increased rates of infectious diseases, such as HIV (Hawkes & Hart, 1993).

**SEXUAL BEHAVIORS INCREASING RISK FOR HIV TRANSMISSION**

Two well-documented sexual risk behaviors that potentially transmit HIV are unprotected sex and multiple sexual partners (Centers for Disease Control and Prevention: Division of HIV/AIDS Prevention, 2011a). Correct and consistent latex condom use has been shown to reduce the risk of transmission of HIV from one infected sex partner to the other by blocking HIV-containing urethral or vaginal secretions from contacting the mucosal surfaces of the uninfected partner (Centers for Disease Control and Prevention, 2011). Limiting the number of sexual partners an individual is exposed to decreases his/her risk for exposure to HIV or to STIs that place one at greater risk for acquiring HIV, if exposed (Centers for Disease Control and Prevention: Division of HIV/AIDS Prevention, 2011a).

**Condom Use among Mexican Migrants**

Mixed results have been found on rates of condom use in Mexican migrant populations. One study found that Mexicans with higher rates of migration to the US were more likely to use condoms more consistently than Mexicans with lower rates of migration (Fosados, Caballero-Hoyos, Torres-López, & Valente, 2006). Relationship status has also been found to be associated with condom use. Mexican migrants rarely report condom use
with regular partners (Organista et al., 1997; Organista & Kubo, 2005; Rangel et al., 2006). Although rates of condom usage are higher in casual or sex worker partners, rates of unprotected sex in Mexican migrants voluntarily returning from the US were still high, at 30.61% of sex acts with casual partners and 22.16% of sex acts with sex workers (Rangel et al., 2006). Mexican migrants without a regular sex partner were more likely to use condoms consistently than those with regular sex partners (Denner et al., 2005). The finding that married and single men did not differ in their use of sex workers, but that married men were significantly less likely to use condoms, indicates greater potential for Mexican migrant men to infect their wives with sexually transmitted infections such as HIV (Bastos et al., 2008; Hernandez-Rosete, Garcia, Bernal, Castaneda, & Lemp, 2008; Organista et al., 1997). Although Mexican migrants have been found to use condoms more frequently with higher risk partners, condom use rates need to increase with all types of sexual partners to reduce transmission risk among those who are not monogamous.

**Number of Sexual Partners**

Unprotected heterosexual sex with multiple partners, including female sex workers, has been found to be prevalent among male Mexican migrants. Organista and Kubo (2005) found that 25% of a sample of 102 Mexican migrants reported sexual encounters with female sex workers in the past two months; 27% of married men and 82% of single male participants in a separate study reported multiple sex partners in the last year (Organista et al., 1997). Lastly, more trips to the US by Mexican migrants have been associated with an increased number of sexual partners (Hirsch, Muñoz-Laboy, Nyhus, Yount, & Bauermeister, 2009).

**Type of Sex**

Certain types of unprotected sex may increase the likelihood of HIV transmission. Receptive anal sex has been found to increase the chances of becoming infected with HIV from an HIV positive sexual partner, compared to vaginal and anal insertive sex (Centers for Disease Control and Prevention: Division of HIV/AIDS Prevention, 2007). Rates of receptive anal sex in Mexican migrant populations have been found to be low, 0%-1.4% in the past six months (Rangel et al. 2006). Most (77.8%) of those reporting receptive anal sex reported not using condoms; two-thirds reported having receptive anal sex with regular
partners only (Rangel et al, 2006). None of the study participants from a Mexican/Latino migrant day laborer population in northern California reported receptive anal sex in the two months prior to the interview (Organista & Kubo, 2005). Low rates of receptive anal sex (i.e. MSM behavior) may represent under reporting due to social stigmas associated with these behaviors.

THE BEHAVIORAL ECOLOGICAL MODEL

This study is based on the Behavioral Ecological Model (BEM) (Hovell, Wahlgren, & Adams, 2009). The BEM argues that individual behavior is primarily influenced by the social and environmental influences from friends, family members, or society. Individual factors such as genetic influences and one’s learning history with the target behavior are also important factors that work in conjunction with the social environment to determine behavior in an individual or group of individuals. At each ecological level, social contingencies reciprocally influence the social environment, culture and policies of a population. At the higher level, culture and policies in turn influence the social contingencies experienced by an individual (see Figure 1). Cultural practices are established and maintained as the result of interlocking patterns of social contingencies among participants in a community. Interlocking contingencies occur when the behavior or the consequences of that behavior act as an antecedent for another’s behavior, which creates a chain reaction through the community (Houmanfar & Rodrigues, 2006). Contingencies are created by firsthand experiences or observations of behaviors that are either praised or criticized following the execution of the behavior. Social norms are sociological concepts by which the public or special groups provide models and probable social contingencies for specific (i.e. cultural) practices. As such, the concept of social norms and measures of social norms can be considered markers of social contingencies. The BEM suggests that the creation of behavior change in an individual or group of individuals requires altering of the existing interlocking contingencies. In the absence of altering the existing interlocking contingencies, risk behavior will persist in accordance with prior conditioning and on-going cultural or interpersonal contingencies. Sustained behavior change requires change in the social environment. Risky sexual behaviors are especially difficult to change, due to the highly physical and social reinforcing nature of sexual behaviors (Pfaus, Kippin, & Coria-Avila, 2003; Ulrich-Lai et al., 2010). These
powerful and immediate contingencies therefore require powerful competing contingencies from multiple societal levels to ultimately reduce risk behavior. This is especially difficult to achieve due to the relative privacy in which sexual practices take place, making immediate social reactions that might serve as reinforcement for safe sex practices unlikely.

**Individual Level Factors**

In the case of deported Mexican migrants, there are a variety of individual level factors that could influence condom use, number of sexual partners and type of sex in an individual or group of individuals. Demographic characteristics such as age, education level, income, marital status, and English speaking ability can influence both the type of environment to which an individual or group of individuals is exposed, and their response to contingencies encountered in their environment. The history of an individual, such as total length of time in the US, number of lifetime sexual partners, past condom use, past alcohol and drug use, sex under the influence of drugs or alcohol, reported HIV risk level, history of
sexually transmitted infections (STI) and past STI testing influence the rates of exposure to social contingencies and future responses to social and environmental contingencies. The total length of time in the US may modify an individual’s history of reinforcement by varying the strength or direction of social contingencies encountered following risk behaviors. Social and biological responses to past personal experiences add to the learning history of an individual which influence future behavior. For this analysis, the selected individual level factors based on the BEM and available data were age; education level; English speaking status; marital status; reported level of HIV risk; lifetime number of HIV tests; lifetime number of STI tests; illicit drug use in the past 12 months; sex under the influence of illicit drugs in the past 12 months; illicit drug use in the past 12 months while in the US; sex under the influence of illicit drugs in the past 12 months while in the US; sex under the influence of alcohol in the past 12 months while in the US; and total time spent in the US over a lifetime.

Research findings have demonstrated associations between individual level factors and risky sexual behaviors (e.g. condom use and multiple sex partners) (Denner et al., 2005; Organista, Organista, Bola, Garcia de Alba, & Castillo Morán, 2000; Organista et al., 1997). The BEM suggests that these variables influence the magnitude and directions of contingencies encountered and ultimately influence individuals’ responses to social and environmental contingencies. HIV risk levels reported by male and female Mexican migrants have demonstrated mixed associations with condom use in Mexican migrant populations. Past studies have measured self-reported HIV level as perceived level of HIV risk. Organista and colleagues (2000) measured perceived HIV risk by how frequently an individual worried about getting HIV and whether or not they knew someone with HIV. Perceived level of HIV risk was significantly and positively correlated with carrying condoms and with always using condoms with occasional sex partners, and negatively but non-significantly correlated with always using condoms with regular sex partners. Denner and colleagues (2005) measured perceived level of HIV risk by how often an individual worried about getting HIV. Consistent condom users reported being worried about becoming HIV infected more frequently than inconsistent condom users (Denner et al., 2005). The reported level of HIV risk can influence condom use frequency because of the social contingencies that exist in the individual’s surroundings. A person may gauge their own level of HIV risk based on the
observed presence or absence of peer praise or criticism in response to risk behaviors. An individual may observe that a person known to frequently have unprotected sex with multiple sex partners is criticized by peers for these high risk behaviors. If the individual does not have unprotected sex with multiple partners, they observe their level of HIV risk to be (comparatively) low. Depending on the contingencies encountered in the community, the perceived level of HIV risk can be accurate or inaccurate. Definitive correlations have not yet been found between reported level of HIV risk and number of sexual partners in deported Mexican migrants, mainly due to the sparseness of available research. Organista and colleagues (1997) found no difference in perceived level of HIV risk between subjects with varying number of sexual partners in a Mexican migrant population. An individual’s reported level of HIV risk while in the US can influence the number of sexual partners, i.e., individuals possibly lower their number of partners if their perceived risk level is high, and fail to decrease their number of sexual partners if their perceived risk level is low. The converse may also be true that individuals report high HIV risk because they are accurately assessing their current behavior and have had a high number of sexual partners.

A history of illicit drug use has been associated with condom usage within Mexican migrant samples (Denner et al., 2005; Sowell, Holtz, & Velasquez, 2008). Mexican migrants who used illicit drugs were less likely to carry condoms (Denner et al., 2005). Research has found prevalent drug use in migrant communities (Hirsch et al., 2009). In turn, drug use has been associated with a higher number of sexual partners within Mexican migrant populations (Denner et al., 2005; Hernández et al., 2009; Hirsch et al., 2009). These relationships may exist due to social contingencies encountered by drug users. These individuals are often surrounded by other individuals who are more concerned about finding their next drug supply, than protecting themselves during sexual intercourse. In drug-using populations most of the resources are funneled into buying more drugs. An individual could be criticized for using precious resources on other items such as condoms. The influence of drugs can impair an individual’s sexual decision-making capability. An individual in a drug-seeking state may be more likely to have unprotected sex in exchange for drugs or money to buy drugs. An individual, who is knowledgeable of correct condom use and the benefits of using condoms, may be more likely to engage in risky sex behaviors that require the least amount of effort to perform when under the influence.
Interpersonal level factors that can influence risky sexual behaviors include migration stress, acculturation stress, and social support. Migration stress directly results from the migration process, and can include stress from illegal border crossings, inadequate housing, or fear of deportation. Acculturation stress directly results from the acculturative process that individuals and groups experience when coming into contact with a new culture, such as becoming accustomed to new beliefs, languages and practices (Berry, 1998; Hovey, 2000). Social support can be either emotional or instrumental, such as having someone to share your feelings with or having someone who would help financially, respectively (Finch, Hummer, Kolody, & Vega, 2001). Interactions between individuals are opportunities for praise or criticism to occur in response to a behavior, which can either reinforce or punish the individual i.e., social contingencies. For the purpose of this analysis these variables are used as interpersonal level variables; although there are aspects of these variables that are experienced at the individual level, such as stress from lack of social ties and support that were left in the country of origin. The presence of stressors and lack of support in the life of a deported Mexican migrant can create a social environment that supports risky behaviors such as drug and alcohol use to escape the stress in the new environment. The previously listed interpersonal level measures were available and included in analysis.

Environmental Level Factors

Environmental level factors that may influence risky sexual behavior are social norms, exposure to heath messages, access to sexual partner, and access to condoms. The BEM states that behavior occurs in the context of the individual or group of individuals’ environment, and there is a reciprocal relationship between them. The environmental level factors available for analysis were lifetime exposure to health messages, exposure to health messages in the past 12 months while in the U.S., and social norms. Past research suggests that social norms play an important role in condom usage frequency within Mexican migrant populations (Apostolopoulos et al., 2006; Organista et al., 2000). Many negative social norms exist within Mexican migrant communities that affect condom carrying and use with sexual partners. Women who carry condoms are thought to be promiscuous, while it is socially acceptable for men to not use condoms (Apostolopoulos et al., 2006; Organista, et al., 1997). Condom social norms are created when condom carrying women are criticized,
which then make the behavior less likely to occur in the future by other female observers of the criticism or the individual criticized. Part of the Mexican culture includes the idea of machismo, which discourages condom usage, and is an idea that is not unique to just the Hispanic population (Sowell et al., 2008; Wolfe, 2003). Due to this culture, condom using men are generally criticized as being less manly. This criticism can be received first hand, or observed, and may make condom use less likely in the future in order for it to be avoided.

Migrant community social norms may also play an important role in the number of sexual partners of a migrant. In Mexican migrant communities, the presence of female sex workers is a common occurrence, and sexual relations with these workers occur often (Apostolopoulos et al., 2006). Male sexual promiscuity outside of marriage is a common social norm within the migrant communities and women are expected to ignore these acts. In addition, men are socially treated by men and women as “better men” if they have more sexual partners, which increases their risk of acquiring HIV and other sexually transmitted infections (Apostolopoulos et al., 2006). The contingencies that reinforce men to have multiple sex partners outside of marriage are fueled by the Mexican cultural practices of machismo. If an individual believes that their friends, families and acquaintances agree that limiting the number of sexual partners is the correct behavior to practice, the individual exposed to these social norms may be more likely to limit the number of sexual partners they have, in order to avoid previously observed criticism. However, such contingencies would be in competition with the larger machismo culture, raising questions about the consistency of safe sexual practices even if social network support is available.

Studies have found that condom use and number of sexual partners were associated with social norms, reported level of HIV risk, and history of illicit drug use (Apostolopoulos et al., 2006; Denner et al., 2005; Hirsch et al., 2009; Organista et al. 2000; Organista et al., 1997; Sowell et al., 2008). These factors should be studied within deported Mexican migrant populations to identify the factors that most contribute to HIV risk behaviors. Based on the literature and the BEM, social norms play a large role in condom usage and number of sexual partners, assessed in a single sexual risk behavior index, in deported Mexican migrants. Thus, it is hypothesized that the individual and environmental factors listed in this study will significantly predict high risk sexual behaviors. The purpose of this study is to add to the sparse literature on deported Mexican migrants, by assessing the contribution of learning
history, individual factors, and social contingencies on sexual risk behaviors in deported Mexican migrants. These factors and contingencies can then be targeted by future interventions in order to decrease HIV risk in deported Mexican migrant populations.
CHAPTER 2

METHODS

RECRUITMENT AND SAMPLING

Participants for this study were recruited from August to November of 2009, at the Tijuana deportation facility. The deportation facility is run by the Mexican government and is one of the locations where US border patrol agents hand-off deported Mexican migrants to the Mexican authorities. A probability sampling design was used to produce a representative sample of the Mexican migrants deported from the US to Mexico. The days and times of sampling were randomly selected with the probability directly proportional to the volume of Mexican migrant repatriations each day, based on quarterly data from the Instituto Nacional de Migración. Eligible participants were individuals who were at least 18 years of age, born in Latin America, and Spanish speaking, who had been returned to Mexico by U.S. immigration authorities, without a previous history of completing the survey. Data collection for this cross sectional, population-based survey was completed at the same location as recruitment, at the Tijuana deportation facility. During each shift, individuals were consecutively approached and screened for eligibility, and invited to participate in the survey, if eligible.

SAMPLE

There were 775 individuals approached to participate in the study, 702 of them were found to be eligible, and 693 of those eligible agreed to participate in the study. The response rate of the questionnaire was 88.5%, and the final sample consisted of 642 males and 21 females. For this study, only the responses of male participants were included. Within the male population, the subset of males who had been sexually active in the US within the last 12 months and had been in the US for more than one day within the last 12 months were included for analysis. The final population consisted of 353 males whose mean age was 31.8 years (SD = 8.3). Almost half of the participants (45.3%) were married or cohabitating. The majority (82.7%) of participants had not completed high school or higher, as shown in Table
Upon completion of the questionnaire, each participant was given a phone card worth 500 pesos. IRB approval was given from the University of Wisconsin, Madison and San Diego State University for the author to use secondary data from the current study. The study, for which this data was originally collected, is an HIV study in Mexican migrants. Data was collected in Tijuana, Baja California, Mexico, from four different types of migrants: (1) migrants traveling from southern Mexico into Tijuana, (2) migrants traveling south, from the US into Tijuana, (3) migrants that were deported from the US into Tijuana, and (4) migrants traveling within the US-Mexico border region into Tijuana. The complete survey covered a variety of topics, including: demographics, travel history, socioeconomic conditions, lifestyle and experiences, HIV risk, HIV/STD testing history, other risk factors during the last 12 months in the US, health status and health care in the last 12 months, deportation circumstances, and immigration history.

**MEASURES**

Anonymous data were collected using A-CASI interviewer-administered questionnaire. When participants reached the Sexual and Other HIV-Related Risk Practices portion of the survey, if the participant desired, the interviewer would complete a brief tutorial with the participant to demonstrate correct computer use, otherwise the interviewer would continue administering the survey. Following the tutorial, if the participant preferred, the laptop was handed to the participant for him/her to self-administer the Sexual and Other HIV Related Risk Practices portion of the survey. The survey instrument consisted of 205 items, and was designed by researchers with over 20 years of research experience in the field. Portions of the survey had been used in a previous study in the same locations with similar populations (Rangel et al., 2006).

**DEPENDENT VARIABLES**

The literature was reviewed and a high risk sexual behavior index was found that had been used in a similar population. A composite sexual risk behavior index was used that incorporated self-reported measures of condom use frequency, types of sexual behavior, and number of sexual partners (Denner et al., 2005). To calculate the index, the number of sexual partners for each type of sexual act i.e. vaginal sex, insertive anal sex, and receptive anal sex,
was multiplied by the reported frequency of condom use for each type of sex act; and all of the three acts were summed. The numbers of sexual partners for each type of sex were assigned the following values: No sexual partner was assigned a value of zero, one sexual partner was assigned a value of 0.5; and two or more sexual partners were assigned a value of 2. Individuals without a sexual partner were recoded as zero to indicate no risk of acquiring an STI. Individuals with one sexual partner were recoded as 0.5 to indicate low risk of acquiring an STI due to the protective nature of monogamous relationships. Individuals with two or more sexual partners were recoded as two to indicate the higher risk of acquiring STIs with multiple sex partners. Condom use frequency was assigned numerical values as follows: always was assigned a value of one, sometimes was assigned a value of two, and never was assigned a value of three. The condom use frequency of receptive anal sex was multiplied by two to indicate the greater risk associated with this sex act. Anal receptive sex is considered higher risk than vaginal and anal insertive due to the increased likelihood of transmission from an HIV infected individual to an uninfected individual (Centers for Disease Control and Prevention: Division of HIV/AIDS Prevention, 2007). The final equation is as follows: 
(recoded number of vaginal sexual partners x frequency of condom use during vaginal sex) + 
(recoded number of anal insertive sexual partners x frequency of condom use during anal insertive sex) + (recoded number of anal receptive sexual partners x frequency of condom use during anal receptive sex x 2).

**INDEPENDENT VARIABLES**

Age was assessed by asking the participant to report their age in years. Marital status was measured with one item asking the participant’s marital status, with the following response options: married or cohabitating, single, and other. The response option “other” was not defined in the questionnaire, but could possibly include those that are separated or in a relationship but not married or cohabitating. For analysis marital status was collapsed into single v. not single. Level of education was measured with one item, “What level of schooling did you complete?” There were ten response options, ranging from none to post graduate studies. English speaking was determined from the response to the question “What language do you speak?” Several options, including English were read to the participants, and for analysis purposes responses were recoded into English and other.
Migration stress was measured by an 11-item scale, asking a dichotomous “Yes/No” response for each statement regarding stress experienced due to the act of migrating to a new country (Finch, Catalano, Novaco, & Vega, 2003; Finch et al., 2001). This stress could be due to coming from a different country, or from illegal status. Some of the statements were “You thought you would be deported if you went to any social or government agencies” and “You found it difficult to find the employment you desired because you are from a different country”. A high score indicates high levels of migration stress, and a low score indicates low migration stress. The scale for this study was created by combining a six-item scale (Finch et al., 2001) and a three-item scale (Finch, Kolody, & Vega, 2000) that were used in a previous study in Mexican-origin adults; two additional items were added by the primary investigators of this study. In the previous studies, the Cronbach’s alpha of the six-item scale was 0.744 and 0.654 for the three-item scale. The combined scale items were modified from a likert scale response to a dichotomous Yes/No response, and should be validated in future studies. The scale used in this study has a Cronbach’s alpha of 0.830, indicating that it is a reliable measure. See Appendix for exact measures.

Acculturation stress was measured with a six-item scale assessing agreement with statements on acculturation stress using a dichotomous (“Yes/No”) response for each. Acculturation stress is associated with adapting to the new beliefs, languages and practices of a dominant culture (Berry, 1998). A high acculturation stress score indicates high levels of acculturation stress experienced by the participant, and a low acculturation stress score indicates a low level of acculturation stress experienced by the participant. Examples of the statements are “you found it hard to deal with daily situations because you had a problem speaking English” and “you found it difficult to interact with others due to the difficulty you have with English”. The scale used in this study was created by combining two previously used three-item scales among Mexican Americans and Mexican migrants (Finch et al., 2001). The three-item scale on language conflict had a Cronbach’s alpha of 0.696 (Finch et al., 2001). The three-item scale on discrimination had a Cronbach’s alpha of 0.760 (Finch et al., 2001). The scale used in this study has a Cronbach’s alpha of 0.806, indicating that it is a reliable measure. The exact wording of scale items was modified by the investigators to apply to the sample and structure, and validity of the scale is needed in the future. See Appendix for exact measures.
Social support was measured by a four-item scale, asking if the participant agreed with the four statements regarding social support. A high social support score indicates that the individual experiences a high level of social support and a low social support score indicates that the individual experiences a low level of social support. The social support statements were “You had someone with whom you could share your innermost thoughts and feelings or problems”, “You had someone who would drive you somewhere if you needed a ride”, “You had someone who would loan you $100 if you needed money”, and “You had someone who would comfort you when you needed it”. Due to high skewness, the scores were collapsed into three categories: zero and one were coded as one, two and three were coded as two and four was coded as three. The scale used in this study was created by combining a three item scale with one binary response measure. The exact wording of scale items was modified to apply to the study sample, setting and structure of the interview. The Cronbach’s alpha of the original three-item scale is 0.771 (Finch et al., 2001). The scale used in this study has a Cronbach’s alpha of 0.745, and has been used in similar populations (Finch et al., 2003; Finch et al., 2001). See Appendix for exact measures.

Lifetime number of HIV tests was measured in one item that asked “In your lifetime, how many times have you been tested for HIV?” Lifetime STI testing was measured with one item that asked “During your lifetime, have you ever been tested for sexually transmitted diseases such as Chlamydia, syphilis or gonorrhea?” and a “Yes/No” response was recorded. Self-reported level of HIV risk during the past 12 months while in the U.S. was measured with one item, asking how the participant would classify their level of HIV risk during the past 12 months while in the U.S. as high, regular, low or unaware of what is HIV. For analysis purposes, the responses were collapsed into a dichotomous variable, low v. not low.

Social norms was measured with an eight-item scale assessing agreement with statements on social norms, which are proxy variables for social contingencies in the US, by a dichotomous (“Yes/No”) response for each. The participants were asked if they agreed or disagreed with statements, such as “In the US, men my age normally use condoms with their casual partners (persons with whom they do not have a romantic relationship)” and “In the US, men my age normally have more than one sex partner”. The questions were recorded to represent a four item sexual partner social norms scale and a four item condom use social norms scale. After calculating the Cronbach’s alpha for each scale, one item in the condom
use social norms scale was eliminated to increase the reliability of the scale. Participants with a high sexual partner social norms score believed that their peers in the US normally have multiple sex partners. Participants with a high condom use social norms scale believed that their peers used and carried condoms regularly. These scales were created by the primary investigators of this study and have not yet validated. The Cronbach’s alpha for the condom use social norms scale was 0.591 and 0.748 for the sexual partner social norms scale. See Appendix for exact measures.

Sex under the influence of alcohol in the last 12 months in the US was measured by one item with a dichotomous “Yes/No” response that asked, “During the past 12 months in the United States, did you ever have sex under the influence of alcohol?” Illicit drug use in the last 12 months was measured by one item response that asked, “During the past 12 months, how many of the following substances had you used?” The responses options include: cocaine (blow, snow, coke, crack, rock), crystal meth/methamphetamines (ice, crank), ecstasy/X/MDMA/E, heroine/smack (paste, white powder), marijuana, inhalants (gasoline, thinners), and other; and are coded as “Yes/No” for each response. Drug use in the last 12 months in the U.S. was measured with the same item and similar response options reworded to assess only the last 12 months while in the US.

Sex under the influence of illicit drugs in the last 12 months was measured with one item with a dichotomous “Yes/No” response and was asked following the previous drug use measure, and was as follows, “Have you ever had sex while under the influence of any of these substances?” Sex under the influence of illicit drugs during the past 12 months in the U.S. was measured with the same item and response options reworded to assess only the last 12 months while in the US.

Exposure to health messages ever was measured by a five item scale assessing agreement with exposure to specific health messages by a dichotomous “Yes/No” response for each. The question was “Have you ever seen or heard anything that promotes the following?” and response options were safe sex health messages such as, “safe sex or condom use” and “reducing the number of sexual partners”. Participants with a score of five reported a high level of safe sex health messages exposure ever and those with zero reported not ever being exposed to safe sex health messages. This scale was created by researchers and has not yet been validated. The Cronbach’s alpha is 0.774, indicating good scale
reliability. Exposure to health messages in the last 12 months while in the US was measured with the same item and same response options reworded to assess only the last 12 months in the US. The scale demonstrated good reliability with a Cronbach’s alpha of 0.806. See Appendix for exact measures.

Length of time spent in the US over a lifetime was measured by one item: “Counting all of your visits to the United States, how much time have you spent in the United States?” Responses were coded as a number and unit of time, such as hours, days, weeks, months, or years, and recoded into hours for analysis purposes.

**DATA ANALYSIS**

Descriptive statistics of demographics, migration variables, and sexual history variables were estimated. Twenty independent variables were selected as possible predictors of sexual risk practices based on the BEM and past research findings. Distribution of the demographic variables of the study sample was compared to those in the overall deported male study population through Chi-square analysis. For each of the independent variables skewness was calculated to check for normality within the responses, and those that had a skewness greater than 1.5 were transformed using natural log transformation. A bi-variate screen was run to check for significance between the independent and dependent variables. Using a conservative approach, variables that were found to have $p>0.110$ were excluded from further analysis. The independent variables that were significantly ($p \leq 0.05$) associated with the dependent variable were checked for correlations greater than 0.50 with other independent variables. To reduce the risk of multicollinearity, the individual independent variables in each highly correlated pair were examined for their correlation with the dependent variable to determine which of the two variables would be entered in the model. A multiple linear regression model was created with the remaining variables, using a backward stepwise process where the dependent variable high risk sexual behavior index was regressed on the total list of independent variables in step one and sequentially replicated with the strongest subset of predictors for each of 2 steps. Individual predictor variables were removed from the model one at a time, beginning with the least significant variable and continuing until the significance of the F change reached 0.100. The removal of any remaining variables would have a significant effect on the model. Independent variables
remaining in the model were separated into three blocks according the BEM, in order to see the variance explained by each theoretical level. All analyses were conducted using Statistical Package for the Social Sciences (SPSS) v18.0.
CHAPTER 3

RESULTS

Of the 353 men, 45.3% were married or cohabitating and 17.3% had completed a high school education or higher. None of the participants reported graduate-level education. The mean age of included participants was 31.82 years (SD: 8.38) and 21% spoke English, as depicted in Table 1. Chi-square analysis showed that the demographic variables of the study sample and total deported male study sample were not significantly different, also shown in Table 1.

Table 1. Demographic Characteristics of the Deported Mexican Male Study Population

<table>
<thead>
<tr>
<th>Characteristic:</th>
<th>Study sample (n=352)</th>
<th>Total deported male sample (n=649)</th>
<th>Chi-squared sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>31.82 (8.38)</td>
<td>31.81 (9.02)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Range: 18-66</td>
<td>Range: 18-73</td>
<td></td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Married</td>
<td>45.3%</td>
<td>48.5%</td>
<td>0.603</td>
</tr>
<tr>
<td>2. Single</td>
<td>47.9%</td>
<td>45.5%</td>
<td></td>
</tr>
<tr>
<td>3. Other</td>
<td>6.8%</td>
<td>6.0%</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td>0.754</td>
</tr>
<tr>
<td>1. None</td>
<td>1.7%</td>
<td>3.5%</td>
<td></td>
</tr>
<tr>
<td>2. Completed some elementary</td>
<td>12.5%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>3. Completed elementary</td>
<td>20.7%</td>
<td>20.8%</td>
<td></td>
</tr>
<tr>
<td>4. Completed some junior high school</td>
<td>10.2%</td>
<td>9.7%</td>
<td></td>
</tr>
<tr>
<td>5. Completed junior high school</td>
<td>26.6%</td>
<td>27.4%</td>
<td></td>
</tr>
<tr>
<td>6. Completed some high school</td>
<td>11.0%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>7. Completed high school</td>
<td>13.6%</td>
<td>10.8%</td>
<td></td>
</tr>
</tbody>
</table>

(table continues)
Table 1. (continued)

<table>
<thead>
<tr>
<th>Characteristic:</th>
<th>Study sample (n=352)</th>
<th>Total deported male sample (n=649)</th>
<th>Chi-squared sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% or mean (SD)</td>
<td>% or mean (SD)</td>
<td></td>
</tr>
</tbody>
</table>

Education

- 8. Some studies in a professional field: 8. 2.0% vs. 8. 1.8%
- 9. Completed studies in a professional field with a degree: 9. 1.7% vs. 9. 1.8%

Speaks English

- 1. Yes: 1. 21.0% vs. 1. 18.8%
- 2. No: 2. 79.0% vs. 2. 81.2%

Total time spent in the US during lifetime (months)

- 134.1 (97.6) vs. 106.12 (106.34)
- (Range: 0-481.7) vs. (Range: 0-710.49)

Types of sexual partners

- 1. Just women: 1. 96.3% vs. 1. 92.0%
- 2. Both men and women: 2. 3.7% vs. 2. 3.7%
- 3. Just men: 3. 0% vs. 3. 0.3%

Self-reported sexual orientation

- 1. Heterosexual: 1. 98.9% vs. 1. 96.5%
- 2. Bisexual: 2. 1.1% vs. 2. 1.1%
- 3. Homosexual: 3. 0% vs. 3. 0.2%

The majority of men had only female partners (96.3%), self identified as heterosexual (98.9%), as shown in Table 1. A majority of men also had never been tested for an STI in their lifetime (77.3%) and had between one to two HIV tests in their lifetime, as shown in Table 2. Sex under the influence of alcohol was reported by slightly less than half of participants (44.5%), and drug use was found to be fairly low, both in the last 12 months and the last 12 months while in the US, as shown in Table 2. Of those who had used illicit drugs, sex under the influence of those drugs occurred in about a fifth of participants. Low self-reported level of HIV risk was the most common response (39.9%). Mean migration and acculturation stress scores were fairly low, 3.71 and 1.91, respectively. High levels of social support (3.64) and moderate levels of exposure to health messages were observed, as shown.
Table 2. Frequencies of Independent Variables used in the Regression Model

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Mean or % (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime ever been tested for STI</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>1. Yes</td>
<td>1. 21.8%</td>
<td></td>
</tr>
<tr>
<td>2. No</td>
<td>2. 77.3%</td>
<td></td>
</tr>
<tr>
<td>Lifetime number of HIV tests</td>
<td>1.68</td>
<td>0 - 20</td>
</tr>
<tr>
<td>Sex under the influence of alcohol in the last 12 months in the US</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>1. Yes</td>
<td>1. 44.5%</td>
<td></td>
</tr>
<tr>
<td>2. No</td>
<td>2. 54.1%</td>
<td></td>
</tr>
<tr>
<td>Drugs used in the last 12 months</td>
<td>0.51</td>
<td>0 - 5</td>
</tr>
<tr>
<td>Sex under the influence of drugs in the last 12 months</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>1. Yes</td>
<td>1. 18.4%</td>
<td></td>
</tr>
<tr>
<td>2. No</td>
<td>2. 79.9%</td>
<td></td>
</tr>
<tr>
<td>Drug use in the last 12 months while in the US</td>
<td>0.51 (0.96)</td>
<td>0 – 5</td>
</tr>
<tr>
<td>Sex while under the influence of illicit drugs in the last 12 months in the US</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>1. Yes</td>
<td>1. 18.4%</td>
<td></td>
</tr>
<tr>
<td>2. No</td>
<td>2. 79.9%</td>
<td></td>
</tr>
<tr>
<td>Risk of HIV in the last 12 months in the US</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>1. High</td>
<td>1. 27.5%</td>
<td></td>
</tr>
<tr>
<td>2. Regular</td>
<td>2. 25.8%</td>
<td></td>
</tr>
<tr>
<td>3. Low</td>
<td>3. 39.9%</td>
<td></td>
</tr>
<tr>
<td>4. Unaware of what is HIV</td>
<td>4. 4.8%</td>
<td></td>
</tr>
<tr>
<td>Migration Stress</td>
<td>3.71</td>
<td>0 - 11</td>
</tr>
<tr>
<td>Acculturation stress</td>
<td>1.91</td>
<td>0 - 6</td>
</tr>
<tr>
<td>Social support</td>
<td>3.64</td>
<td>0 - 4</td>
</tr>
<tr>
<td>Exposure to health messages, ever</td>
<td>3.16</td>
<td>0 - 5</td>
</tr>
<tr>
<td>Exposure to health messages in the last 12 months in the US</td>
<td>2.95</td>
<td>0 - 5</td>
</tr>
<tr>
<td>Condom use social norms</td>
<td>2.38 (0.90)</td>
<td>0 – 3</td>
</tr>
<tr>
<td>Sex partner social norms</td>
<td>2.99 (1.29)</td>
<td>0 – 4</td>
</tr>
</tbody>
</table>
in Table 2. Condom use social norms and sex partner social norms were also observed at moderately high levels, as shown in Table 2.

The mean high risk sexual behavior index score was 3.01. The mean number of vaginal, anal insertive, and anal receptive ranged from 0.017 to 2.97 as shown in Table 3. The mean number of vaginal, anal insertive female, anal insertive male, and anal receptive sex partners is: 1, 0, 0, and 0. The percent of partners with which one or more episode of unprotected sex occurred for each type of sex, ranged from 33.33% to 70.52%, as displayed in Table 3. Additionally, after stratifying mean number of vaginal partners by marital status married, single, and other participants had 1.95, 3.52, 5.87 mean number of partners, respectively.

A bi-variate screen identified nine of the independent variables as significantly associated with the dependent variable: age, education, marital status, English speaking, self-reported HIV risk, drug use in the last 12 months, sex under the influence of drugs in the last 12 months, drug use in the last 12 months in the US, and sex under the influence of drugs in the last 12 months in the US. Three additional independent variables with significance levels greater than 0.05 and less than 0.11 were retained for their theoretical importance. These independent variables were lifetime STI testing, condom social norms, and sex partner social norms. Lastly, eight independent variables, migration stress, acculturation stress, social support, lifetime HIV tests, sex under the influence of alcohol in the last 12 months in the US, exposure to health messages ever, exposure to health messages in the last 12 months in the US, and total length of time in the US, were excluded from analysis due to non-significant correlations with the high risk sexual behavior index.

Of the remaining 12 independent variables, six pairs were found to be significantly correlated with each other. The highly correlated (Pearson’s $r > 0.50$) independent variables are shown in Table 4. After going through each of the six highly correlated pairs, sex under the influence of illicit drugs in the last 12 months in the US remained out of the four inter-correlated variables. There were nine independent variables that were used in the backward stepwise linear regression model. One variable, lifetime STI testing, was removed in the second step of the stepwise model. The final linear regression model included the following eight independent variables: age, level of education, English speaking, marital status,
<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Mean or % (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk sexual behavior index</td>
<td>3.01 (2.52)</td>
<td>0.5 – 12</td>
</tr>
<tr>
<td>Number of vaginal partners</td>
<td>2.97 (7.46)</td>
<td>0 – 100</td>
</tr>
<tr>
<td><em>Recoded number of vaginal partners</em></td>
<td>1.13</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Percent of vaginal partners with which they had ≥1 episodes of unprotected vaginal sex</td>
<td>63.59% (0.489)</td>
<td>na</td>
</tr>
<tr>
<td><em>Recoded frequency of unprotected vaginal sex</em></td>
<td>2.25</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Number of anal insertive partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Female</td>
<td>0.78 (4.56)</td>
<td>1.0 – 80</td>
</tr>
<tr>
<td>2. Male</td>
<td>0.03 (0.22)</td>
<td>2.0 – 3</td>
</tr>
<tr>
<td><em>Recoded number of insertive partners</em></td>
<td>0.27</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Percent of anal insertive partners with which they had ≥1 episode(s) of unprotected anal insertive sex.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Female</td>
<td>70.52% (65.78%)</td>
<td></td>
</tr>
<tr>
<td>2. Male</td>
<td>33.33% (51.64%)</td>
<td></td>
</tr>
<tr>
<td><em>Recoded frequency of unprotected anal insertive sex</em></td>
<td>2.25</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Number anal receptive partners</td>
<td>0.017 (0.00)</td>
<td>0 – 3</td>
</tr>
<tr>
<td><em>Recoded number of anal receptive partners</em></td>
<td>0.01</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Percent of anal receptive partners with which they had ≥1 episode(s) of unprotected anal receptive sex</td>
<td>50% (50%)</td>
<td>na</td>
</tr>
<tr>
<td><em>Recoded frequency of unprotected anal receptive sex</em></td>
<td>2</td>
<td>1 - 3</td>
</tr>
</tbody>
</table>
Table 4. Highly Correlated Independent Variables

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Independent Variable</th>
<th>Pearson’s $r$</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug use last 12 months</td>
<td>Drug use last 12 months in the US</td>
<td>0.994</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Drug use last 12 months</td>
<td>Sex under the influence of drugs in the last 12 months</td>
<td>0.687</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Drug use last 12 months</td>
<td>Sex under the influence of drugs last 12 months in the US</td>
<td>0.693</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Drug use last 12 months in the US</td>
<td>Sex under the influence of drugs in the last 12 months</td>
<td>0.685</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Drug use last 12 months in the US</td>
<td>Sex while under the influence of drugs in the last 12 months in the U.S.</td>
<td>0.692</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sex under the influence of drugs in the last 12 months</td>
<td>Sex under the influence of drugs in the last 12 months in the U.S.</td>
<td>0.962</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

reported level of HIV risk (low v. not low), condom use social norms, sex partner social norms, and sex under the influence of illicit drugs while in the US in the last 12 months. Acceptable levels of multicollinearity were found, with all tolerance levels being ≥ 0.943.

All of the independent variables included in the final model were individually significantly ($p<0.05$) related to the high risk sexual behavior index, with the exception of sex partner social norms ($p=0.106$) and condom use social norms ($p=0.079$). The high risk sexual behavior index was negatively correlated with age, marital status, reported level of HIV risk (low and not low), and condom use social norms; and positively correlated with English speaking, level of education, sex partner social norms, and sex under the influence of illicit drugs while in the US in the past 12 months. These correlations are presented in Table 5.
Table 5. Pearson Correlations and 2-Tailed Significance of Independent Variables with the Dependent Variable

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Pearson’s r</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.112</td>
<td>0.035</td>
</tr>
<tr>
<td>Marital status (married and not married)</td>
<td>-0.164</td>
<td>0.002</td>
</tr>
<tr>
<td>English speaking</td>
<td>0.178</td>
<td>0.001</td>
</tr>
<tr>
<td>Level of education</td>
<td>0.173</td>
<td>0.001</td>
</tr>
<tr>
<td>Self-reported level of HIV risk (low and not low)</td>
<td>-0.192</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sex while under the influence of illicit drugs while in the U.S. in the past 12 months</td>
<td>0.194</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Condom use social norms</td>
<td>-0.095</td>
<td>0.079</td>
</tr>
<tr>
<td>Sex partner social norms</td>
<td>0.087</td>
<td>0.106</td>
</tr>
</tbody>
</table>

Within the model, self-reported level of HIV risk had the greatest influence on high risk sexual behavior index score, followed by sex under the influence of illicit drugs in the last 12 months in the US, English speaking, level of education, condom use social norms, sex partner norms, age, and finally marital status. The strengths of these influences are displayed in Table 6.

There were nine variables entered into the backward stepwise regression. The first step included all of the independent variables. The second step took out lifetime STI testing, and eight variables remained in the final model. These steps are depicted in Table 7. The adjusted R² increased from 0.143 in the first step to 0.144 in the second step. None of the β coefficients altered greatly from step one to step two, as shown in Table 6.
Table 6. B Coefficients, Standard Error of B And Beta Coefficients of Independent Variables in the First and Final Step of the Backward Stepwise Linear Regression

<table>
<thead>
<tr>
<th>Step 1 Independent variables</th>
<th>Level according to the BEM</th>
<th>B</th>
<th>S.E.</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Demographics</td>
<td>-0.035</td>
<td>0.016</td>
<td>-0.112</td>
<td>-2.137</td>
<td>0.033</td>
</tr>
<tr>
<td>Marital status</td>
<td>Demographics</td>
<td>-0.445</td>
<td>0.271</td>
<td>-0.087</td>
<td>-1.645</td>
<td>0.101</td>
</tr>
<tr>
<td>English speaking</td>
<td>Demographics</td>
<td>0.856</td>
<td>0.330</td>
<td>0.138</td>
<td>2.597</td>
<td>0.010</td>
</tr>
<tr>
<td>Level of education</td>
<td>Demographics</td>
<td>0.178</td>
<td>0.075</td>
<td>0.125</td>
<td>2.378</td>
<td>0.018</td>
</tr>
<tr>
<td>Lifetime STI testing</td>
<td>Individual</td>
<td>0.252</td>
<td>0.319</td>
<td>0.041</td>
<td>0.789</td>
<td>0.431</td>
</tr>
<tr>
<td>Self-reported level of HIV risk (low and not low)</td>
<td>Individual</td>
<td>-0.926</td>
<td>0.264</td>
<td>-0.179</td>
<td>-3.512</td>
<td>0.001</td>
</tr>
<tr>
<td>Sex while under the influence of illicit drugs while in the U.S. in the past 12 months.</td>
<td>Individual</td>
<td>1.073</td>
<td>0.340</td>
<td>0.163</td>
<td>3.159</td>
<td>0.002</td>
</tr>
<tr>
<td>Condom use social norms</td>
<td>Environmental</td>
<td>-0.339</td>
<td>0.152</td>
<td>-0.120</td>
<td>-2.228</td>
<td>0.027</td>
</tr>
<tr>
<td>Sex partner social norms</td>
<td>Environmental</td>
<td>0.224</td>
<td>0.108</td>
<td>0.113</td>
<td>2.077</td>
<td>0.039</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 (final) Independent Variables</th>
<th>Level according to the BEM</th>
<th>B</th>
<th>S.E.</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Demographics</td>
<td>-0.033</td>
<td>0.016</td>
<td>-0.108</td>
<td>-2.07</td>
<td>0.039</td>
</tr>
</tbody>
</table>

(table continues)
Table 6. (continued)

<table>
<thead>
<tr>
<th>Step 2 (final) Independent Variables</th>
<th>Level according to the BEM</th>
<th>B</th>
<th>S.E.</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
<td>Demographics</td>
<td>-0.472</td>
<td>0.268</td>
<td>-0.093</td>
<td>-1.76</td>
<td>0.079</td>
</tr>
<tr>
<td>English speaking</td>
<td>Demographics</td>
<td>0.877</td>
<td>0.329</td>
<td>0.141</td>
<td>2.67</td>
<td>0.008</td>
</tr>
<tr>
<td>Level of education</td>
<td>Demographics</td>
<td>0.183</td>
<td>0.075</td>
<td>0.128</td>
<td>2.45</td>
<td>0.015</td>
</tr>
<tr>
<td>Self-reported level of HIV risk (low and not low)</td>
<td>Individual</td>
<td>-0.917</td>
<td>0.263</td>
<td>-0.177</td>
<td>-3.48</td>
<td>0.001</td>
</tr>
<tr>
<td>Sex while under the influence of illicit drugs while in the U.S. in the past 12 months</td>
<td>Individual</td>
<td>1.089</td>
<td>0.339</td>
<td>0.166</td>
<td>3.21</td>
<td>0.001</td>
</tr>
<tr>
<td>Condom use social norms</td>
<td>Environmental</td>
<td>-0.338</td>
<td>0.152</td>
<td>-0.119</td>
<td>-2.22</td>
<td>0.027</td>
</tr>
<tr>
<td>Sex partner social norms</td>
<td>Environmental</td>
<td>0.229</td>
<td>0.108</td>
<td>0.116</td>
<td>2.13</td>
<td>0.034</td>
</tr>
</tbody>
</table>

Table 7. Summary of Steps 1 and 2 in Backward Stepwise Linear Regression

<table>
<thead>
<tr>
<th>Step:</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>ΔF</th>
<th>Significance ΔF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: All variables</td>
<td>0.165</td>
<td>0.143</td>
<td>7.249</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Step 2: lifetime STI testing removed</td>
<td>0.164</td>
<td>0.144</td>
<td>0.622</td>
<td>0.431</td>
</tr>
</tbody>
</table>
The final multiple linear regression model variables were re-run organized into three blocks according to the BEM. The first block contained the demographics and explained 7% of the total variance. The second block contained the individual level factors self-reported level of HIV risk and sex under the influence of drugs in the last 12 months in the US and explained 6.1% of the total variance. The third block contained condom use social norms and sex partner social norms and explained 1.3% of the total variance. The independent variables together accounted for 14.4% of the variance within the high risk sexual behavior index scores, as displayed in Table 8. The final model was found be with significant (F=8.086; df=8; p<0.001).

### Table 8. Contributions of Each Block in Determining High Risk Sexual Behavior

<table>
<thead>
<tr>
<th>Determinant</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Adjusted R² (cumulative)</th>
<th>ΔF</th>
<th>Significance ΔF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1: Demographics</td>
<td>0.081</td>
<td>0.070</td>
<td>0.070</td>
<td>7.379</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Block 2: Individual level factors</td>
<td>0.146</td>
<td>0.131</td>
<td>0.061</td>
<td>12.583</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Block 3: Environmental level factors</td>
<td>0.164</td>
<td>0.144</td>
<td>0.013</td>
<td>3.544</td>
<td>0.030</td>
</tr>
</tbody>
</table>
CHAPTER 4

DISCUSSION

Demographic and self-reported sexual preference characteristics were compared between the current study sample and the total deported male sample from the larger study, to see if selected participants were comparable in other aspects. Both samples had similar demographic characteristics, types of sexual partners and self-reported sexual orientations. Although participants were selected for a history of sex in the US in the last 12 months, they were not more likely to be of a certain age, gender, level of education, or sexual orientation. If the study samples did vary in one of these aspects further investigations would have been necessary to find how these characteristics would make a person more likely to have sex in the US in the last 12 months or a history of being in the US at least 24 hours.

Of the 353 participants very few reported sex with other males, which could be due to low prevalence of the behavior or could be due to under reporting of the stigmatized behavior. Low rates of bisexual and homosexual behavior indicates that there are also low rates of receptive anal sex, which is a higher risk sexual behavior compared to anal insertive or vaginal sex (Centers for Disease Control and Prevention: Division of HIV/AIDS Prevention, 2007). These findings are consistent with past research, and may indicate that addressing receptive anal sex in this population may not be as appropriate or efficient as in other risk groups (Organista & Kubo, 2005; Rangel et al., 2006).

A majority of the men had only female partners; therefore the mean number of vaginal sex partners in the past 12 months, 2.97, is a good representation of the average number of sexual partners per year in this population. Past studies have had mixed results regarding rates of multiple sexual partners in deported Mexican migrants, but these studies had smaller sample sizes; therefore findings from this study should be taken as a more accurate measure to date (Martinez-Donate et al., 2005; Rangel et al., 2006). After stratifying by marital status, evidence of multiple sexual partners was found, even in married men and may place their wives at greater risk of acquiring HIV. Reducing the number of
sexual partners is key to decreasing risk for HIV, and would be an appropriate focus for risk reduction efforts in this population.

Twelve independent variables passed the bi-variate screen \( p < 0.11 \), and of these six pairs were found to be highly correlated with each other. The variables drug use in the last 12 months, drug use in the last 12 months in the US, sex under the influence of drugs in the last 12 months, and sex under the influence of drugs in the last 12 months in the US were all significantly correlated with each other. These correlations are logical, because depending on the length of time the individual was in the US, last 12 months and last 12 months in the US responses could be close or identical. Additionally, if individuals have used drugs in the last 12 months, they are more likely than non drug users to have sex under the influence of these drugs. Sex under the influence of drugs in the last 12 months in the US was found to have the highest correlation with the dependent variable and was retained for analysis. In addition, the dependent variable is a measure of risk behaviors in the last 12 months while in the US which may explain the higher correlation with the variable that was measured in the same time frame. Sex under the influence of illicit drugs was highest correlated with the high risk sexual behavior index; therefore it is not just the act of using illicit drugs, but having sex while under the influence of those drugs that best predicts high risk sexual behaviors.

Four demographic characteristics, age, level of education, English speaking, and marital status, were included in the final model and were found to be significantly associated with the high risk sexual behavior index. These demographics serve as controls for sampling error, leading to more confidence in the generalizability of other predictors in the same model. These characteristics are also good indicators of past and current social environments of individuals; which, according to the BEM, influence the types of contingencies they are exposed to and are conditioned to follow. Individuals or groups of individuals respond to behaviors differently, according to the social contingencies that exist in the environment that the behavior occurs in. The age of an individual can influence the type of peers they associate with, which make up their social environment. Age can also influence the opportunity that an individual or group of individuals has to experience or observe certain behaviors; older individuals, due to a longer life, may have greater opportunity than younger individuals to experience or observe behaviors and responses to those behaviors by others in the environment. The level of education of an individual or group of individuals can influence
the thought process prior to a behavior and how they will respond to behaviors. Whether or not an individual can speak English indicates if they are able to understand and interpret social contingencies in a predominantly English speaking country such as the US. Therefore people that cannot speak English may be more likely to hold onto social contingencies from Mexico, and those who can speak English may be more likely to follow social contingencies in the US. Marital status of an individual can influence the social environment they are exposed to; those who are single may associate with more single individuals, and those who are married may be more likely to surround themselves with similar people who are also married.

The reported level of HIV risk of an individual was found to be significantly associated with the high risk sexual behavior index. Reported level of HIV risk was dichotomized in order to be inputted into the regression model and was coded as low v. not low. A negative correlation was found between the two variables (-0.188), indicating that persons who reported being at low risk for HIV infection are participating in lower sexual risk behaviors, and those who report being not at low risk for HIV infection participate in higher sexual risk behaviors. These findings indicate that this population could be accurately assessing their current risk level according to their current risk behaviors. Additionally, future interventions should not make perceived risk a priority, because this population is aware of their risk level and this type of environment is a good basis for addressing decreasing HIV risk in a population.

Condom use social norms and sex partner social norms, which are markers of social contingencies, were fairly correlated with the high risk sexual behavior index. These findings support the BEM, in that social contingencies are key in determining sexual risk behavior. An environment that embraces safe sex behaviors, such as using condoms and decreasing the number of sexual partners, may make these behaviors more likely in the future, depending on the learning history and individual factors within the individual or group of individuals. The almost significant condom use social norms correlation was in the negative direction, indicating that participants, who agreed with a greater number of safe sex social norms, were more likely to have a lower high risk sexual behavior index. This correlation suggests that if safe sex social contingencies were made more prevalent, it would be associated with a
decrease in high risk sexual behaviors, measured by the high risk sexual behavior index in this study.

Sex under the influence of illicit drugs in the last 12 months while in the US was significantly and negatively correlated with the high risk sexual behavior index. These findings indicate that participants who reported having sex under the influence of illicit drugs were more likely to participate in high risk sexual behaviors, measured by the high risk sexual behavior index. Sex under the influence of drugs impairs judgment and decision making capabilities, which makes behavior change difficult. In a sober state of mind an individual may follow the safe sex social norms in their social environment, but under the influence of illicit drugs, the existing social contingencies in the surrounding environment may be over-powered by the strong physical reinforcers.

Within the multiple linear regression model, self-reported level of HIV risk had the highest effect on the high risk sexual behavior index in the study sample. Participants accurately assessed their current risk level; participants who reported low HIV risk level were more likely to report a lower high risk sexual behavior index. This variable is a marker for the learning history with the risk behavior, and indicates that they have learned which types of sexual behavior come with higher risks. Prevention efforts should be based on these findings, and acknowledge that deported Mexican migrants can assess risk level of sexual behaviors, and efforts should start at addressing social contingencies in order to create behavior change.

Sex under the influence of illicit drugs in the last 12 months in the US had the second greatest influence on high risk sexual behavior index. The strong biological effect that drugs have on an individual’s decision making capabilities in regards to high risk sexual behaviors may be greater than other environmental or individual factors. In addition, individuals that use illegal drugs may be greater risk takers in general than those who do not. These findings suggest that in order to decrease high risk sexual behaviors in deported Mexican migrants, decreasing drug use must first be addressed; otherwise prevention efforts will be unsuccessful because individuals under the influence of illicit drugs will not respond to social contingencies in the same manner as those who are sober. Specific prevention programs must be tailored to illicit drug using deported Mexican migrants because behavior change in this
population is more difficult due to the competing biological effects of illicit drugs on one’s decision making capabilities (National Institute on Drug Abuse, 2011).

The first step in the backward stepwise linear regression model was testing the hypothesis that the independent variables could account for variance in the high risk sexual behavior index. The second step was exploratory to find if the model could be improved by removing independent variables. The total variance explained did increase with the removal of one independent variable, and the best possible model was created with the available variables.

The final multiple linear regression model accounted for 14.4% of the total variance in the high risk sexual behavior index, and was found to be significant. Therefore the hypothesis was correct, in that the individual and environmental level factors, age, marital status, level of education, English speaking, self-reported level of HIV risk, sex under the influence of illicit drugs in the last 12 months in the US, condom use social norms and sex partner social norms, can significantly predict high risk sexual behavior, as measured by the high risk sexual behavior index. Block 2, containing the individual level factors sex under the influence of illicit drugs in the last 12 months in the US and self-reported level of HIV risk, explained 6.1% of the total variance, indicating that after controlling for demographics these variables explained the majority of the variance. Block 3, containing the environmental level variables, condom use social norms and sex partner social norms, accounted for 1.3% of the total variance, indicating that social norms did not explain the variance to a high degree.

These findings suggest that behavior can be explained by individual characteristics, biological factors, learning history, and social contingencies. The BEM states that these factors have to be taken into consideration when creating behavior changes because they are all working together within an individual or group of individuals to produce a behavior. When reducing high risk sexual behaviors in deported Mexican migrants biological factors and learning history have to be assessed and taken into consideration before social and environmental contingencies can be altered, because they are all interdependent on each other.

This study had several limitations, the largest being that it was based on secondary data; therefore variables were limited to the pre-existing measures. The available measures may not have been the most accurate way to assess the desired constructs, and improved
measures may exist, but were not able to be utilized. The high risk sexual behavior index used in this study was adapted from a previous study (Denner et al., 2005), and the measures used to calculate the index in the current study were not exactly the same as in the original. The frequencies of unprotected sex with vaginal, anal insertive and anal receptive partners were each measured by one item that asked how frequently the individual had sex with a condom for each type of sexual partner. The response options were: never, sometimes, and always. This type of measure was not available with the current data set, but was calculated first as a percent of partners with which they had one or more incidence of unprotected sex for each type of sex act, and then recoded into always (0%), sometimes (0<%<100), and never (100%). The limitation in this form of measurement is that it is impossible to tell if individuals with one partner never or sometimes use condoms with their partner, because the response would look identical. This limitation may affect the validity of the index, and the present measure may represent a liberal estimate of the actual high risk sexual behaviors, due to possibly coding individuals that sometimes use condoms as those who never use condoms. By coding individuals that sometimes use condoms as never using condoms, the score would be increased to represent higher sexual risk behaviors than what is actually occurring. Also in relation to the high risk sexual behavior index, if values were recoded differently than described by Denner and colleagues (2005), results could vary drastically. Additionally, casual relationships are unable to be determined, due to the cross-sectional nature of this study. Many of the independent variables assessed factors or behaviors in the last 12 months in the US, which is the same time frame in which the high risk sexual behavior index was measured; therefore it is impossible to determine when the independent variables occurred in relation to the high risk sexual behaviors. Accurate reporting on socially taboo risk behaviors, such as men having sex with other men, is questionable. Rates of this type of risk behavior were low in this population, and should be further studied to determine how much social desirability is affecting reported rates. According to the BEM, learning history impacts future behaviors, but many of the deported Mexican migrants have very different learning histories and are a source of unexplained variance, and therefore a limitation in the model. Lastly, none of the variables in this study directly measure social contingencies, but only markers of contingencies. The measures of social contingencies used were not highly specified and did not measure the level of exposure to these contingencies. Additionally, the
additive or synergistic interactions among social contingencies were also not captured in the current measures.

The deported sample analyzed in this study is difficult to be compare to other types of populations within Tijuana, because studies assessing deportation history is limited. There are many aspects of deportation as a risk factor that have yet to be measured and analyzed. In addition, the manner in which high risk sexual behaviors were measured is not a comparable form of measurement to risk behaviors assessed in other groups within Tijuana. It is difficult to determine how deported Mexican migrants differ from other illegal Mexican migrants that have not been deported, and what types of factors are associated with each group. Some individuals included in this study may also be first time deportees and have not yet experienced the stress and consequences of deportation, and have yet to participate in high risk behaviors intended to reduce this additional stress. The larger study from which this sample was obtained, collected data on four different types of populations passing through Tijuana; once these data are analyzed, between populations comparisons can be made of the effects of deportation history on high risk behaviors.

This study was able to show that individual characteristics, learning history, biological factors, and social contingencies help to explain some of the variance in high risk sexual behaviors. Future studies should utilize a variety of recoding schemes to create the high risk sexual behavior index in order to see how the recoding of variables impacts the results. Future studies should also validate and improve the modified scales used in this study, in order to observe if greater variance is explained with improved construct measures, or if there are other factors working that are yet to be determined. Once improved measures are established, longitudinal studies should be conducted to determine causal relationships of mediators and moderators on high risk sexual behavior. Longitudinal studies may recruit first time deportees and follow them prospectively for a set number of years to assess which risk factors and social contingencies account most for high risk sexual behaviors. Structural equation modeling may also need to be employed to more precisely measure the strength and direction of the direct and indirect pathways among variables.
REFERENCES


APPENDIX

SURVEY MEASURES
S1. How old are you?
   ___ ___ years old

S2. What is your gender?
   1  Male
   2  Female

S3. What is your marital status?
   0  Married (living with someone)
   1  Single
   2  Other

S4. What level of schooling did you complete?
   0  None
   1  Completed some elementary
   2  Completed elementary (all grades 1 – 6)
   3  Completed some junior high school
   4  Completed junior high school (all grades)
   5  Completed some high school
   6  Completed high school (all semesters)
   7  Some studies in a professional field.
   8  Completed studies in a professional field with a degree
   9  Post graduate studies

S7. What languages do you speak? (Mark all that apply)
   ___ Spanish
   ___ English
   ___ An Indigenous Language (for example: Mixteco, Zapoteco, Pima, Tarahumara)
   ___ Other languages

C15. Thinking about the last 12 months while in the US, tell me if you agree with the following phrases. (mark all that apply)
   ___ People treated you badly because you could not speak English well.
   ___ You found it difficult to find the employment you desired because you are from a different country.
   ___ You felt others did not accept you because you were from a different country.
   ___ You felt others did not accept you because of your sexual preference.
   ___ You felt your legal status limited your contact with friends and family.
   ___ You were questioned about your legal status.
__ You thought you would be deported if you went to any social or governmental agencies
__ You feared being deported
__ You avoided contact with immigration enforcement.
__ You experienced difficulties finding legal services.
__ You experienced difficulties obtaining health care due to your migrant status.
__ Refuse to answer

C16. Thinking about the last 12 months while in the US, tell me if you agree with the following phrases. (Choose all that apply)
__ You found it difficult to interact with others due to the difficulty you have with English.
__ You felt pressured to learn English.
__ You found it hard to deal with daily situations because you had a problem speaking English.
__ People disliked you because you are from a different country.
__ People treated you unfairly because you are from a different country.
__ You had friends who were treated unjustly because they were from another country
__ Refuse to answer

C17. Think of the people you knew during the last 12 months while in the US, tell me if you agree with the following phrases. (Choose all that apply)
__ You had someone with whom you could share your innermost thoughts and feelings or problems.
__ You had someone who would drive you somewhere if you needed a ride
__ You had someone who would loan you $100 if you needed money
__ You had someone who would comfort you when you needed it
__ Refuse to answer

E1. How would you classify your level of risk for HIV/AIDS when you were IN THE UNITED STATES?
0 High
1 Regular
2 Low
3 I don’t know what HIV/AIDS is
8 Refuse to answer

E2. In your lifetime, how many times have you been tested for HIV?
__ 00000 Zero
__ 77777 Don’t know
__ 88888 Refuse to answer
E7. During your lifetime, have you ever been tested for sexually transmitted diseases, such as Chlamydia, syphilis or gonorrhea?

1 Yes
0 No
8 Refuse to answer

F1A. (Ask of Men Only) Thinking about the last 12 months while in the US, please tell me if you agree with the following phrases. (Mark all that apply)

__ IN THE U.S., men my age normally use condoms with their stable partner (spouse, girl/boyfriend).
__ IN THE U.S., men my age normally use condoms with casual partners (persons with whom they do not have a romantic relationship).
__ IN THE U.S., men my age normally carry condoms with them.
__ IN THE U.S., it is easy for men my age to get condoms.
__ IN THE U.S., men my age are normally unfaithful to their spouse or stable partner.
__ IN THE U.S., men my age normally have sex with casual partners (persons with whom they do not have a romantic relationship).
__ IN THE U.S., men my age normally have more than one sex partner.
__ IN THE U.S., men my age normally have sexual with prostitutes or sex escorts.
__ Refuse to answer

F23. During the past 12 months in the UNITED STATES, did you ever have sex while drinking alcohol?

1 Yes
0 No
8 Refuse to answer

F24. During the past 12 months, which of the following substances have you used? (Mark all that apply)

__ Cocaine (blow, snow, coke, crack, rock)
__ Crystal Meth, Methamphetamines (Ice, Crank)
__ Ecstasy/X/MDMA/E
__ Heroin, Smack (paste, white powder)
__ Marijuana
__ Inhalants (gasoline, thinners)
__ Other
__ Refuse to answer
F25. Have you ever had sex while under the influence of any of these substances?
   1   Yes
   0   No
   8   Refuse to answer

F26. During the past 12 months in the United States which of the following substances have you used? (Mark all that apply)
   __ Cocaine (blow, snow, coke, crack, rock)
   __ Crystal Meth, Methamphetamines (Ice, Crank)
   __ Ecstasy/X/MDMA/E
   __ Heroin, Smack (paste, white powder)
   __ Marijuana
   __ Inhalants (gasoline, thinners)
   __ Other
   __ Refuse to answer

F27. During the past 12 months, have you had sex while under the influence of any of these substances in the United States?
   1   Yes
   0   No
   8   Refuse to answer

F37. Have you ever seen or heard anything that promotes the following? (Mark all that apply)
   __ Safe sex or condom use
   __ Tests for sexually transmitted diseases
   __ Tests for HIV/AIDS
   __ Being a faithful sex partner
   __ Reducing the number of sexual partners
   __ None
   __ Refuse to answer

F38. During [TIMESTR], did you see or hear anything that promotes the following? (Mark all that apply)
   __ Safe sex or condom use
   __ Tests for sexually transmitted diseases
   __ Tests for HIV/AIDS
   __ Being a faithful sex partner
   __ Reducing the number of sexual partners
   __ None
   __ Refuse to answer
H16. Counting all your visits to the United States, how much time have you spent in the United States?

*Interviewer: Enter the number here and the time unit (e.g., hours, days, weeks, months, or years) in the next question.*

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>zero Skip to H17</td>
</tr>
<tr>
<td>777</td>
<td>Don’t know Skip to H17</td>
</tr>
<tr>
<td>888</td>
<td>Refuse to answer Skip to H17</td>
</tr>
</tbody>
</table>

H16a. Select the time unit the participant has spent in the United States? (Choose one)

- 0 Hours
- 1 Days
- 2 Weeks
- 3 Months
- 4 Years
- 7 I don’t know
- 8 Refuse to answer