

2016-01-01

# Gender Differences In Initiation Into Methamphetamine Use In A Mexico-U.S. Border City

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GENDER DIFFERENCES IN INITIATION INTO METHAMPHETAMINE USE  
IN A MEXICO-U.S. BORDER CITY

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GENDER DIFFERENCES IN INITIATION INTO METHAMPHETAMINE USE  
IN A MEXICO-U.S. BORDER CITY

by

AMIR GERARDO HERNANDEZ, B.A.

THESIS

Presented to the Faculty of the Graduate School of  
The University of Texas at El Paso  
in Partial Fulfillment  
of the Requirements  
for the Degree of

MASTER OF PUBLIC HEALTH

Department of Public Health Sciences  
THE UNIVERSITY OF TEXAS AT EL PASO

May 2016

## **ACKNOWLEDGEMENTS**

I would like to express my deep gratitude to Dr. Oralia Loza for her never-ending patience, motivation, and help in guiding me through this process. Additionally, I would like to thank Dr. Thenral Mangadu and Dr. Joao Ferreira-Pinto for their constructive suggestions and useful critiques of this work. I would also like to extend my thanks to the staff of the Alliance of Border Collaboratives and Programa Compañeros, A.C. whose work made this project possible. Finally, I would like to thank the participants who shared their stories.

## ABSTRACT

**BACKGROUND & SIGNIFICANCE:** The literature indicates that there are gender differences in drug use patterns but there is minimal information available on initiation into methamphetamine (meth) use by gender, especially on the border region. Along the U.S.-Mexico border, Cd. Juarez and Tijuana have been described as being in a potential state of a meth outbreak due to drug trafficking, substance abuse, migration, violence, and poverty. **AIMS & OBJECTIVES:** The aims of this study are to describe current methamphetamine users in Cd. Juarez and their drug using behaviors and identify gender differences in their socio-demographic characteristics, initiation into meth use, recent meth use, and recent sexual risk behaviors. **METHODS:** This study is a secondary data analysis from a cross-sectional study that collected measures on meth use factors, cross-border mobility factors, and initiation into meth use. The total sample size was 150 current meth users in Cd. Juarez, MX. This study aims to describe characteristics of initiation into meth use, recent meth use, and recent sexual risk behaviors and assess gender differences. Mixed methods were used to quantify qualitative data and merge a quantitative data set and a qualitative data set. **RESULTS:** The sample population included 100 men, 49 women, and one transwoman with a mean age of 30.9 years of age. Regarding initiation into meth use, city ( $p=0.05$ ) and the people present ( $p=0.011$ ) during first time use of meth significantly differed by gender. For recent meth use (past 12 months), there were significant gender differences in the number of different people present when meth was used ( $p=0.001$ ), obtaining meth in a hotel ( $p=0.043$ ), from sexual partner ( $p=0.041$ ) or in El Paso or other part of the U.S. ( $p=0.016$ ). Other significant gender differences existed for meth use snorted by nose ( $p=0.012$ ) and taken as tablet/pill ( $p=0.045$ ), powder ( $p=0.009$ ), or rock ( $p=0.006$ ), as well as consuming meth with principal sex partner ( $p=0.007$ ). **CONCLUSIONS:** Results yielded

significant gender differences in the city at initiation into meth and people present at initiation. Other significant gender differences included the ways meth was recently used and people with whom meth is used and obtained. The results indicate that drug use within couples may influence substance abuse either at initiation or recent use. Other noticeable trends included a high frequency of meth use initiation in the club scene in Cd. Juarez. **RECOMMENDATIONS:** In this study, women were found to have acquired and used meth with their sex partner more often than men. Additionally, friends were more often than not both the means to acquire meth and the person that meth was consumed with. Therefore, behavioral intervention strategies through couples therapy would help alleviate substance related issues in their relationships and peer interventions can help individuals lower the risks of substance abuse. Additionally, clubs were found to heavily mentioned in being involved in initiation into meth use so, different venues such as clubs and bars, or spaces adjacent to these venues should be targeted for interventions and distribution of literature on meth use risks.

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# **CHAPTER 1: BACKGROUND AND SIGNIFICANCE**

## **INTRODUCTION**

Meth is an addictive stimulant with various detrimental effects on the body. It comes in many forms, shapes, and sizes. Additionally, it can be consumed in a number of ways using various tools. Increased meth production in the border region has brought with it a number of substance abuse related issues. Due to limited literature on factors of meth use by gender in the U.S.-Mexico border region this study will aim to address the association of those contextual factors and how they are related with initiation into meth use. This secondary data analysis may have the potential to inform others with regards to the implementation of strategies and prevention methods for the region.

### **1.1 THE BORDER REGION**

The La Paz agreement, 1983, defines the border region between Mexico and the United States as the area extending 100 kilometers north and south of the international boundary between the two countries ([U.S. Department of State \(DoS\), 1984](#)). This border region encompasses six Mexican states including Baja California Norte, Sonora, Chihuahua, Nuevo Leon, and Tamaulipas and four states from the United States, California, Arizona, New Mexico, and Texas. Furthermore, there are 44 U.S. counties and 80 Mexican municipalities along the border region with an estimated total population of 14.6 million people ([Lee, 2013](#)).

#### **1.1.1 El Paso - Cd. Juarez**

The Paso del Norte region consists of the cities of Las Cruces, New Mexico, Cd. Juarez, Mexico, and El Paso, Texas. The population of El Paso County, TX was estimated at 800,647, in

2010. Within El Paso county 82.2% of people are of Hispanic origin, foreign born people total 26.9%, and households where the language spoken other than English is at 74.8% ([U.S. Census Bureau \(USCB\), 2014](#)). In 2010, 52% of the population in El Paso were females, and 48% were males ([U.S. Census Bureau \(USCB\), 2010](#)). The population of the Cd. Juarez, CHI was 1,398,400 people in 2014 ([Consejo Nacional de Poblacion \(CONAPO\), 2014](#)). In 2010, the population of Cd. Juarez was comprised of 49.9% men and 50.1% women with median age 25 ([Instituto Nacional de Estadística y Geografía \(INEGI\), 2010](#)).

Within the El Paso-Cd. Juarez area, people from both countries cross navigate the border daily. It was estimated that from January to August of 2014 there was a total volume of 2,636,643 non-commercial vehicles, 251,358 commercial vehicles, and 2,689,943 pedestrians between the major border crossings of El Paso and Cd. Juarez ([City of El Paso, 2014](#)).

### **1.1.2 Drug Use and Trafficking**

Drug use and drug trafficking in the United States has been described as being a "drain on the economic, physical, and social health of American society" ([U.S. Department of Justice \(USDOJ\), 2011a](#)). There are many issues involved with drug use and abuse including cost to society, crime, and health. The availability of different illicit drugs in the United States has increased since 2007 ([U.S. Department of Justice \(USDOJ\), 2011a](#)). The supply and demand of various drugs such as cocaine, heroin, marijuana, and meth in the west Texas border region have either stayed the same or increased in various years compared to the rest of the United States ([U.S. Department of Justice \(USDOJ\), 2011a](#)). With increased demand and supply, drug trafficking and the need for transportation of these substances between both countries, has become a priority for drug traffickers.

Drug trafficking in the United States has primarily involved the southwest border region, including foreign made meth ([U.S. Department of Justice \(USDOJ\), 2011b](#)). Illicit drugs such as cocaine, heroin, marijuana, and meth make their way to the United States through various points in the United States border region ([U.S. Department of Justice \(USDOJ\), 2011b](#)). In the West Texas region, increased availability and demand between 2000 and 2010 for illicit drugs bring about many issues such as increased gang activity due to drug trafficking ([U.S. Department of Justice \(USDOJ\), 2011c](#)). On both sides of the El Paso-Cd. Juarez border region, issues such as drug trafficking and drug related violence had become commonplace ([U.S. Department of Justice \(USDOJ\), 2011c](#)). Certain drugs such as cocaine have begun to be increasingly more available in the west Texas border region. Meth production and availability has also increased in the west Texas border region ([U.S. Department of Justice \(USDOJ\), 2011c](#)).

El Paso has shown signs of increased meth production and use from the late 1980s to 2012 ([J. Maxwell, 2012a](#)). In 2010, 41 kilograms of meth were seized at several El Paso points of entries, up from 3 kilograms (kg) in 2008 ([U.S. Department of Justice \(USDOJ\), 2011c](#)). Meth production has been documented in El Paso in addition to increased production and trafficking coming in from Mexico ([U.S. Department of Justice \(USDOJ\), 2011c](#)). More meth was seized in the west Texas region in 2010 (85kg) than the previous four years combined (69kg) ([U.S. Department of Justice \(USDOJ\), 2011c](#)).

### **1.1.3 Gender Norms**

Gender is defined by social constructs such as how society deals with reproduction, sexuality, and both fatherhood and motherhood ([Connell, 2012](#)). Another, defines its approach to gender in a relational view where gender has multidimensional ties with social and economic issues as well as ties to people, categories, and institutions ([Connell, 2012](#)). Other definitions of

gender are more encompassing and involve more than two genders such as intersex or transex ([Johnson, Greaves, & Repta, 2009](#); [Johnson & Repta, 2012](#)). This may be due to gender being a social construct and its constantly changing nature due to many factors such as culture ([Johnson et al., 2009](#)). Gender norms are behavioral roles applied to people depending on their gender and are aimed to categorize or control people ([Johnson et al., 2009](#)). Some of these gender norms on the border include men having ‘breadwinner’ roles in a household while other gender norms limit women to have ‘non-traditional women’ jobs ([Johnson et al., 2009](#)). Other gender norms for men include ‘machismo’ or being tough while women are expected to be passive and have more household duties ([Gates, 2002](#); [Tatar, 2006](#)).

Gender norms may lead to differences in drug using risk behaviors. Changes in gender norms such as the concept of women being ‘young, free, and single’ has led women to come out and socialize in the nighttime venues such as clubs and bars where recreational drug use can occur ([Mesham, 2002](#)). Additionally, women with time constraints due to their gender roles in their households, might take illicit substances to go without sleep for more leisure time to accomplish both household duties and recreational activities ([Mesham, 2002](#)). Women have reported using meth because they believed that it would increase energy and decrease fatigue caused by home care, child care, and other family or household responsibilities ([Brecht, O’Brien, von Mayrhauser, & Anglin, 2004](#); [Cretzmeyer M., 2003](#)). Other drug using gender norms for women such as body image and the apparent need for weight control can affect a woman’s initiation into drug use due to stimulants appetite suppressing effects ([Mesham, 2002](#)). Additionally, among women, damage to skin and teeth has been reported even though they cited using meth to control weight and enhance their physical appearance ([Cretzmeyer M., 2003](#)). In a 2012 study, among 209 female meth users in San Diego that looked at drug dealing correlates

found that drug dealing behaviors might stem from poor self-concept and self-confidence ([Semple, Strathdee, Zians, & Patterson, 2012](#)). Among men, alcohol has long been tied with masculinity and initiation into manhood ([Russell & Mishkind, 1989](#)). Furthermore, the more a man drinks the more manly that person is deemed to be ([Russell & Mishkind, 1989](#)). In a study that looked at the roles of masculinity in alcohol using undergraduate men found that being a ‘playboy’, being a risk taker, and having ‘winning’ norms were positively associated with drinking to intoxication ([Iwamoto, Cheng, Lee, Takamatsu, & Gordon](#)).

These studies show gender norms with regards to drug using behaviors for both men and women, however additional research, such as this secondary data analysis, could support the examination of drug use and abuse as gender norms change on the border.

## **1.2 METHAMPHETAMINE USE AND ABUSE**

Stimulants are a type of drug that can alter various aspects of a user’s physiology. Some of these changes include increased heart rate and respiratory rate, increased attention and alertness; as well as, an elevation of blood pressure ([National Institute on Drug Abuse \(NIDA\), 2014b](#)). Stimulants are drugs that can physically and mentally keep the body functioning when there should be fatigue in the body ([Hart & Ksir, 2011](#)). Popular non-illicit stimulants include caffeine and nicotine, found most commonly in coffee and cigarettes, respectively. Popular illicit stimulants include cocaine and amphetamines such as speed or meth. Meth also known as crystal or ice, is a stimulant that can be highly addictive and is similar in its chemical composition to amphetamine ([National Institute on Drug Abuse \(NIDA\), 2014a](#)). Meth can be described as a crystalline powder or crystal that is sometimes found in various other forms and colors, such as white or clear, it can be smoked, injected, snorted, or taken orally ([Office of National Drug Control Policy \(ONDCP\), 2014](#)).



Meth can be highly addictive due to the release of the dopamine, the chemical responsible with pleasure, into the brain. Some short-term side effects of prolonged meth use or abuse include, increased breathing and wakefulness, irregular heartbeat, and decreased appetite; additionally, some long-term side effects of meth use are weight loss, dental problems, paranoia, insomnia, and hallucinations ([National Institute on Drug Abuse \(NIDA\), 2015](#)).

Drug abuse is defined as "the use of a drug in such a manner or in such amounts or in situations such that the drug use causes problems or greatly increases the chance of problems occurring" ([Hart & Ksir, 2011](#)). Additionally, the Diagnostic and Statistical Manual of Mental Disorders (DSM) describes substance abuse as a disorder comprised of a "cluster of cognitive, behavioral, and physiological symptoms" ([American Psychiatric Organization \(APO\), 2013](#)). Drug abuse can lead to drug dependence which is when a person needs the drug to function due to constant and frequent use ([Hart & Ksir, 2011](#)). Information on meth use and abuse for the U.S., Mexico, and the U.S.-Mexico border region is discussed by gender in the following sections.

### **1.2.1 U.S. and Texas**

In the United States, in 2012, around 1.2 million people or 0.4% of the population reported to have used meth within the last year ([National Institute on Drug Abuse \(NIDA\), 2013](#)). Also, in 2012 there was approximately 133,000 new users, with an average age of 19.7 years, among those who were 12 or older ([National Institute on Drug Abuse \(NIDA\), 2013](#)). However, the use of meth by the general population and adolescents has been declining since 2011 ([National Institute on Drug Abuse \(NIDA\), 2013](#)). Although meth use overall has shown signs of decline in the United States, meth use in different regions of the United States has

increased such as in the Midwest and the Western regions ([National Institute on Drug Abuse \(NIDA\), 2013](#)).

Admission rates for treatment of meth abuse in the United States may give us an idea of growing meth use trends in the United States. Regarding admission for treatment drug use in 2009 in Texas, approximately 8% of admissions were due to meth use while in Arizona and New Mexico, the rates were 17% and 9%, respectively ([J. Maxwell, 2012a](#)). However, in California, 27% of all admissions were due to meth ([J. Maxwell, 2012b](#)), down from 31% in 2003 ([J. C. Maxwell & Rutkowski, 2008](#)). Treatment for smoking use of meth has increased from 2003 to 2010 in the United States ([J. Maxwell, 2012b](#)).

### **1.2.2 Mexico and Chihuahua**

Meth consumption in Mexico had a six fold increase between 1988 and 2008 ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)). Meth is the fourth most preferred drug in Mexico by both men and women drug users with 0.5% of the population reported preferring it ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)). First time use of meth at a young age (less than 18 years old) is also very common, at 46.5% of reported users ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)). Meth use is more prevalent with males (0.4%) than with females (0.1%) for those ages 12-65 ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)). In Mexico, lifetime meth use for among males (0.79%) and use in the last year (0.16%) and last month (0.11%) is greater compared to females 0.21%, 0.06%, and 0.03%, respectively ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)). In 2008, Amphetamine and meth use in the state of Chihuahua was 1% of the population aged 16-65 ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)). Male use of amphetamines and meth in Chihuahua was 1.9% compared to 0.1% in females ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)).

### 1.2.3 U.S.-Mexico Border Region

Among those aged 12 to 65, meth and amphetamine use for males, in the Mexican border states of Baja California (4.2%), Coahuila (0.3%), and Nuevo Leon (0.8%), was higher than females, at 1.2%, 0.1%, and 0.1%, respectively ([Instituto Nacional De Salud Publica \(INSP\), 2008](#)). Admission rates for meth use (per 100,000) among those aged 12 and older in U.S. border states of Arizona, California, and New Mexico were 58, 145, and 39 in 2010 respectively ([U.S. Department of Health and Human Services \(USDHHS\), 2012](#)). In a 2009 study in California among 985 Mexican immigrant men, 21% reported having used meth or cocaine among those, 59% reported meth use ([Hernandez et al., 2009](#)). The overall impact of meth, including trafficking and admissions for treatment, has increased in San Diego County between 2001 and 2005 according to surveillance data from San Diego county ([Pollini & Strathdee, 2007](#)). In a 2011 study in various cities across both sides of the border region it was reported that meth use among immigrants was most common during their stay in the United States ([Sánchez-Huesca & Arellanez-Hernández, 2011](#)). Additionally, in a study among 222 People who Inject Drugs (PWID) in Tijuana reported meth use in combination with other drugs ([Brouwer et al., 2009](#)). In a 2009 study in Tijuana MX, meth users were also shown to be polydrug users; using such drugs as heroin in combination with meth ([Rusch et al., 2009](#)). In a 2004 study among 44 PWIDs in Cd. Juarez and Tijuana it was reported that injecting meth was most often done in combination with other drugs ([Case et al., 2008](#)). A 2009 study among 427 PWIDs in Tijuana and Cd. Juarez found that there was a lower amount of meth users in Cd. Juarez than in Tijuana ([Ramos et al., 2009](#)). This trend continued in a study where among 140 female sex workers (FSWs), in Cd. Juarez, only 6% reported using meth compared to 34.6% in Tijuana (N=155) ([Patterson et al., 2006](#)). In a 2015 study among 1,025 PWIDs in Tijuana that looked at behaviors of PWIDs found

that the use of methamphetamine in combination with other drugs such as cocaine and heroin was associated with more overdoses and high risky sex behaviors than only heroin use ([Meacham et al., 2015](#)).

Admission rates for meth and meth use in combination with other drugs were the most commonly cited findings in the previous studies. The studies highlighted in this section point to a gap in the literature that exists with regards to meth use and abuse factors, such as the ways, works and forms of meth use in the U.S.-Mexico border region.

### **1.3 CORRELATES AND RISK FACTORS FOR METHAMPHETAMINE USE**

#### **1.3.1 Framework**

Risk factors and behaviors with regards to substance abuse, such as meth use, can be organized into a framework. The ecological model for health promotion is one such framework that can be used to describe several risk factors into separate groups. The ecological model allows us to understand the complex interrelations for individual, social, and structural risk factors ([Center for Disease Control and Prevention, 2015](#)). Aside from facilitating our understanding of these risk factors, this framework helps us identify, develop, and implement interventions at the different levels of influence ([Center for Disease Control and Prevention, 2015](#); [McLeroy, Bibeau, Steckler, & Glanz, 1988](#)). Contextual risk factors were identified and classified using this framework. The ecological model categorizes behaviors into five levels:

- "(1) intrapersonal factors- characteristics of individual such as knowledge, attitudes, behavior, self-concept, skills, etc. This includes the developmental history of the individual.
- (2) interpersonal processes and primary groups -formal and informal social network and social support system, including the family, work group, and friendship networks.
- (3) institutional factors - social institutions with organizational characteristics, and formal (and informal) rules and regulations for operation.

- (4) community factors -relationships among organizations, institutions, and informal networks within defined boundaries.
- (5) public policy-local, state, and national laws and policies"

[\(McLeroy et al., 1988\)](#)

The five levels of the ecological model can be further cataloged into three themes. Levels (2) and (4) can be combined into a social theme while levels (3) and (5) can be combined into a structural theme. Lastly, level (1) is unchanged and remains at the individual theme. This allows risk factors and correlates to be reviewed clearly at each of the levels in the ecological model. The following factors involved in an individual's initiation into meth can also be sorted into this model. These factors at first time use include by whom was the individual introduced to meth by (e.g., friend, family member), which form of meth they consumed, how was meth consumed (including type, and tools used), when did they consume (age), why was it consumed (reason), and where was meth consumed (space or venue) ([McLeroy et al., 1988](#)).

### **1.3.2 Individual**

At the individual level, factors that affect people are those factors that are very close to influencing that person or can directly affect that person for example friendships and relationships, some of these include family and friends ([McLeroy et al., 1988](#)). Correlates for meth use vary greatly. A history of drug use and early onset drug use has been shown to be a correlate for meth use ([Brecht et al., 2004](#)). Meth users reported using marijuana, tobacco, cocaine, heroin, and hallucinogens, ([Brecht et al., 2004](#)). Further studies have also shown that people who are first time meth users are also poly-drug users ([Sheridan, Butler, & Wheeler, 2009](#)). Other correlates associated with meth use relating to the individual are positive attitudes towards drugs and sexual experience ([Sattah et al., 2002](#)). People who participated in 'anti-social' or 'endangering' behaviors such as stealing, binge drinking, and assault are more likely to use

meth than their non-meth using counterparts ([Herman-Stahl, Krebs, Kroutil, & Heller, 2007](#)).

Moreover, people who were in high psychological distress are also more likely to use meth than those who do not have as much psychological distress or not at all.

Studies have shown that being homeless, being white, and completing less than a high school education has been associated with meth during first time use ([Fast, Kerr, Wood, & Small, 2014](#)). In a 2007 study that looked at data of 23,645 men and women from the 2002 National Survey on Drug use and Health (NSDUH) found that race has been shown to be associated with use of meth, the odds of meth use was lower among Blacks (Odds Ratio (OR): 0.10; 95% Confidence Interval (CI): 0.04, 0.23) than whites ([Herman-Stahl et al., 2007](#)). In the same study, low education was shown to also be a correlate for meth use; people who have never enrolled in post-secondary education are more than likely to use meth than those in college (OR: 0.63; 95% CI: 0.44, 0.89) ([Herman-Stahl et al., 2007](#)).

Females become more dependent to meth faster, additionally more adolescent females reported to be dependent on meth than adolescent males, 63.7% vs. 15.0%, respectively ([Dluzen & Liu, 2008](#)). Among females who were younger than 30 years of age, lesbian and bisexual women (17%) were shown to have significantly higher rates for meth use than heterosexual females (9.7%) ( $p < 0.001$ ) ([Dluzen & Liu, 2008](#)). Women have been shown to be at risk for meth use at earlier ages than men are ([Dluzen & Liu, 2008](#)).

### **1.3.3 Social**

At the social level, risk factors and correlates include those influences that come from interpersonal networks and communities. Examples include family, associations, social standards, and a broad array of social networks. Correlates for meth use include family dysfunction and lack of a family confidant ([Sattah et al., 2002](#)). Intimate partner violence among

women has been shown to be associated with meth use ([Abdul-Khabir, Hall, Swanson, & Shoptaw, 2014](#); [Ludwig-Barron et al., 2014](#)). Additionally, a history of physical abuse and sexual abuse has been shown to be common among those who use meth than among those who did not ([Fast et al., 2014](#)). Women whose relationship with a partner is classified as asymmetric sexual dynamics, or relationships between sexual partners where one person is powerless, were a bit more likely (but not significant) to use meth through access from a spouse or sex partner (35% for females vs. 24% for males) ([Brecht et al., 2004](#)). Factors such as child abuse, intimate partner violence, and other health issues such as mental health can be risk factors for first time meth use. Compared to men, women are more likely to be introduced to meth by their sex partner ([Herman-Stahl et al., 2007](#)). Some factors relating to women regarding meth use may be influenced by what society demands of women. At least one study suggested that females preferred meth due to its appetite-suppressing effect ([Brecht et al., 2004](#)). Additional factors include being religious, religiosity has been shown to be a risk factor for meth use adversely, being less religious was associated with a decrease in the likelihood of having used meth in the past 12 months ([Herman-Stahl et al., 2007](#)). In a 2002 study, that looked at contextual factors of meth use and abuse in New York city found that some social contextual factors for meth use among 49 gay and bisexual men included the venue, place, and friends as social factors for abuse ([Halkitis P, 2003](#)). In a 2007 study, that looked at correlates of depressed mood among adult female meth user, found that loss of social relationships can be social factors for current meth use ([Semple, Zians, Strathdee, & Patterson, 2007](#)).

#### **1.3.4 Structural**

At the structural level, correlates, and risk factors include influences from structures or institutions such as rules, policies, laws, and regulations at the local, state, and federal level. At

this level, the scope of influence is broad and encompasses many themes. Having been in prison has also shown to be correlated with meth use; a 2012 study among 75 young crystal meth users in Vancouver showed that many of them had a history of being in prison or the juvenile justice system ([Fast et al., 2014](#)). Other studies have shown that men who use or traffic meth are more likely than females to be involved with crimes (54.8% vs. 25.9%; not significant), and have been shown to be arrested more often than women ([Dluzen & Liu, 2008](#)).

The studies addressed in the individual, social, and structural sections show a gap in the literature. Studies that encompass all three risk factors in their research could help lessen the lack of information with regards to contextual risk factors of meth use.

#### **1.4 INITIATION INTO METHAMPHETAMINE USE**

Various documented contextual factors associated with meth use initiation may be facilitated by people such as a friend and other meth users. In a 2004 study that looked at differences in initiation into meth use, 59% reported being introduced by a friend, 13% by a significant other, 3% by parents, 12% by other family member, and 3% by coworkers ([Brecht et al., 2004](#)). Additionally, if the person had a friend who used, they usually facilitated the meth initiation ([Brecht et al., 2004](#)). Additional studies have found that during initiation into meth use someone within the user's close social network was the one that introduced them to the substance ([Ding, He, & Detels, 2013](#); [Sheridan et al., 2009](#)).

In a 2013 study among young adults in New York City involved with the dance club scene found that clubs and bars were to key venues for meth use ([Kelly, LeClair, & Parsons, 2013](#)). Outside of the U.S. place of first time use differs by location. In a 2012 study (N=276) among new-type drug users in Shanghai, China showed that the venue at first time use, including nightclub or bar (30.1%), dance club (19.6%), and friend's house or own house (21.7%) is an



important subject regarding initiation ([Ding et al., 2013](#)). Drug use and past drug history can contribute to first time use of meth. In a 2009 study among a group of meth users in New Zealand, almost all of the participants reported using other drugs prior to their initiation into meth use ([Sheridan et al., 2009](#)).

Other non-first time use factors that were explored in the study included common method of meth use. Smoking has been identified as a more prevalent route of consumption during first time use ([Sheridan et al., 2009](#)). The use of tin foil and light bulbs has been reported to have been used to smoke meth during first time use as well and injecting ([Sheridan et al., 2009](#)). Health, social, and behavioral problems related to meth use were also explored in this study. Proportions (men vs. women) for weight loss (84% vs. 84%), sleeplessness (78% vs. 78%), violent behavior (57% vs. 57%), and dental problems (55% vs. 50%) were the same.

#### **1.4.1 Gender Differences in Initiation into Methamphetamine Use**

Some differences exist among men and women with regards to initiation into meth use. In a 2004 study that looked at gender differences and examined meth use behaviors among 350 participants in Los Angeles who had previously received treatment for meth use, found that the mean age for initiation into meth use was 19.3 for men and 18.5 for women however, they were not significantly different ([Brecht et al., 2004](#)). More men were introduced to meth by friends (63%) than were women (53%) (p-value=.009) ([Brecht et al., 2004](#)). Men have cited wanted ‘to experiment’, ‘replace drug’, ‘better sex’, and ‘work more’ more than women for reasons of initial use of meth ([Brecht et al., 2004](#)). More women cited ‘wanting to get high’, ‘to have fun’, ‘to get energy’, ‘friends use’, and ‘to stay awake’ than men, however these were not significantly different differences ([Brecht et al., 2004](#)).

In a 2013 study that looked at 276 new drug users among adults in Shanghai found that women were more likely than men to have started using meth for weight loss purposes ([Ding et al., 2013](#)). Additionally, women were more likely to be introduced to meth from their spouses and partners than men ([Brecht et al., 2004](#); [Ding et al., 2013](#)). More women (52%) compared to men (49%) listed to get high when giving a reason for first time use; however, more men (43%) than women (39%) listed experimenting as their reason, however neither were significantly different ([Brecht et al., 2004](#)). Other studies have shown that overall both men and women list curiosity as a reason for first time meth use ([Ding et al., 2013](#)).

#### 1.4.2 Initiation into Methamphetamine Use on the U.S.-Mexico Border

Areas of the United States are at risk or in the middle of a meth epidemic, the border region is no exception to that risk ([Case et al., 2008](#)). An "equation of risk" has been developed to describe a threat of an outbreak along communities in the U.S.-Mexico border (Figure 1.1)

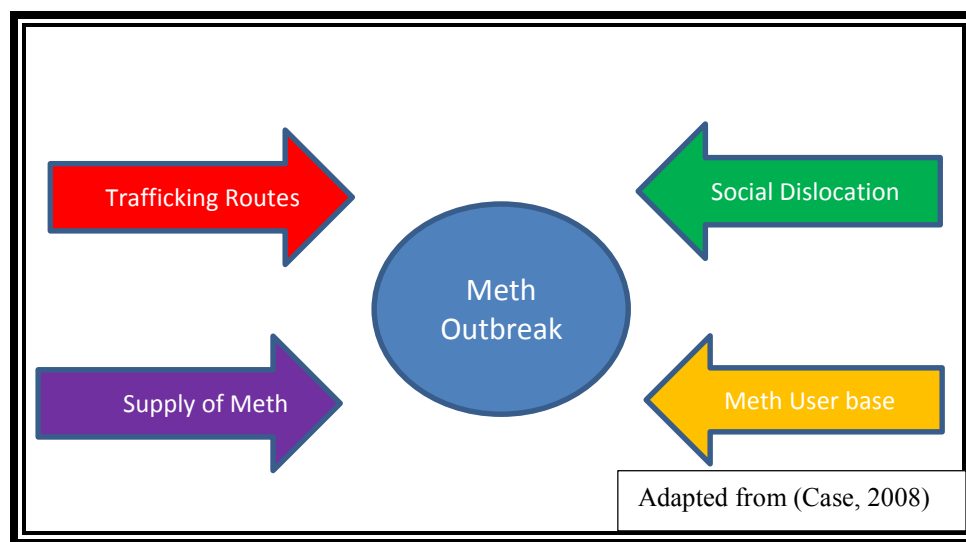


Figure 1.1: Equation of Risk.

The variables used in this hypothetical social equation include dislocation from a social setting due to war, poverty, natural disaster or migration; as well as, a supply of meth in

proximity to manufacturing sites and trafficking routes ([Case et al., 2008](#)). Other variables of the "risk equation" include an established meth user base and patterns of stimulant use ([Case et al., 2008](#)). Along the U.S.-Mexico border, Tijuana has met all of the factors in the risk equation and Cd. Juarez may have recently met several or all of the factors in the risk equation which seems to indicate that Cd. Juarez may be in a potential state of a methamphetamine outbreak ([Case et al., 2008](#)).

Along the U.S.-Mexico border, research on initiation into meth use has been explored on a limited basis. In a binational study sample (N=125) that looked into the initiation of meth use among women who were undergoing treatment for methamphetamine use in San Diego, CA and Tijuana MX, the proportion of women who first used meth at home or a friend's home was 71% for women in San Diego and 57% for women in Tijuana ([Lopez-Zetina et al., 2010](#)). Mean age at first use for women in Tijuana was 19.4 versus 22.5 in San Diego ([Lopez-Zetina et al., 2010](#)). Additionally, past use of illicit drugs among women from San Diego who had used alcohol and/or other illicit drugs at initiation was 69% compared to 56% from Tijuana ([Lopez-Zetina et al., 2010](#)). In a 2009 study among 340 bisexual and gay men in San Diego found that reasons for initiation included to party, to cope with problems, for energy, and for self-esteem reasons ([Nakamura, Semple, Strathdee, & Patterson, 2009](#)).

A gap seems to exist between information available for initiation into meth use, especially initiation into meth use by gender in the border region. The studies referenced here do not contain enough information to paint a clearer picture of gender differences in the border region. Additionally, further research could help Hispanic populations, specifically drug users in the U.S.-Mexico border area.

## **CHAPTER 2: GOALS AND OBJECTIVES**

### **2.1 GOAL AND OBJECTIVES**

The goal of this study was to describe meth use in a U.S.-Mexico border city. The objectives of this study were to document the experiences of current meth users and contribute to the gaps in the literature in (1) describing meth use in the Cd. Juarez/El Paso border region; (2) assess gender differences in meth use; and (3) and inform future public health efforts with meth users, particularly in Hispanic populations.

## **CHAPTER 3: STUDY AIMS AND HYPOTHESES**

### **3.1 AIMS**

The aims of this study were to:

(1) describe current meth users in Cd. Juarez and their drug using behaviors and determine gender differences in:

- a) Socio-demographic Characteristics
- b) Initiation into Methamphetamine use
- c) Recent Methamphetamine use
- d) Recent Sexual Risk Behaviors

(2) Identify potential points of intervention for initiation into meth use.

### **3.2 HYPOTHESES**

Gender differences were assessed by testing the following hypotheses for measures describing characteristics of initiation into meth use, recent meth use, and recent sexual risk behaviors.

#### *Initiation into Methamphetamine Use*

The following hypotheses were tested to determine gender differences in contextual factors describing first time meth use.

1. The following individual contextual factors will differ by gender: ways meth was used, works used to use meth, form in which meth was used, age at initiation, and reason for use.
2. The following social contextual factors will differ by gender: acquisition of meth and people present during use.

3. The following structural contextual factors will differ by gender: city, venue, and space where meth was consumed.

#### *Recent Methamphetamine Use*

These hypotheses pertain to gender differences in recent meth use or use in the past 12 months.

1. The distribution of meth use and acquisition, will differ by gender.
2. The proportion of location and people with regards to meth use will differ by gender.
3. The proportion of the ways meth was used, works used to use meth, and forms in which meth was used will differ by gender.
4. The proportion of meth use in combination with other drugs will differ by gender.

#### *Recent Sexual Risk Behaviors*

Lastly, these hypotheses assess gender differences in recent sexual risk behaviors in the past 12 months.

1. The proportion of the use of meth before or during sex will differ by gender.
2. The proportion of those who engage in transactional sex by providing sex in exchange for meth or money, currently or ever, will differ by gender.
3. The proportion of those who engage in transactional sex by receiving sex, in exchange for meth or money, currently or ever, will differ by gender.

## **CHAPTER 4: METHODS AND MATERIALS**

This secondary data analysis was conducted using data collected for the UTEP Vulnerability Issues in Drug Abuse (VIDA) Project funded by the National Institute on Drug Abuse (NIDA). Dr. Oralia Loza from the UTEP Department of Public Health Sciences is PI of the pilot study and provided permission to use this data. An application for IRB exception for this secondary data analysis was submitted and approved at UTEP.

### **4.1 PARENT STUDY**

The parent study is entitled “Social and Contextual Vulnerability on the U.S.-Mexico Border” and referred to as the VIDA Meth Pilot Study. The purpose of the parent study was to examine individual, social, and structural factors associated with initiation into meth use in Cd. Juarez, Mexico.

#### **4.1.1 Study Participants**

The inclusion criteria for study participation was, participants must (1) have used meth in the last 3 months; (2) be a Hispanic adult residing in Cd. Juarez; (3) be 21 years old or older; (4) self-reported abstinence from alcohol and drugs one hour prior to signing informed consent. The exclusion criteria for this study excluded those who (1) did not meet the inclusion criteria; (2) had serious mental illness; and (3) and failed to provide informed consent.

The target sample population in terms of age consisted of 21-30 years olds (50%) versus those 31 or older (50%). The gender of the sample population was women or transgender women (33.3%) and men (66.6%). The types of participants included employees (25%), students or those in the "party scene" which included bars and clubs (25%), and people from the drug using

community (50%). The target sample for cross-border mobility for those who crossed to El Paso, TX in past 12 months was 50% versus those who did not 50%.

#### **4.1.2 Sample Size**

The sample size was 150 participants.

#### **4.1.3 Study Design**

The study was a cross-sectional design, where the data was collected at one point in time, with mixed methods involving both qualitative and quantitative data collection ([Sullivan, 2012](#)).

#### **4.1.4 Data Collection**

A questionnaire was developed by the Principal Investigator and the UTEP VIDA Meth Pilot Study team from different sections of other instruments developed by Dr. Michele Shedlin (New York University, formerly at the University of Texas at El Paso), Dr. Carlos Magis-Rodriguez (former director of research from the National Council of Prevention and Control of AIDS, Secretaría de Salud), and Dr. Josiah M. Heyman (University of Texas at El Paso). Additional questions were adapted from the Screening and Intervention Programme for Sensible Drinking (SIPS) ([UK Department of Health, 2006](#)) and the Rapid Alcohol Problems Screen (RAPS4, Public Health Institute) ([Cherpitel, 2000](#)). The questionnaire was translated into Spanish by the UTEP VIDA staff. The instrument included both close ended and open-ended questions which produced quantitative data and qualitative data.

Programa Compañeros, a non-profit organization in Cd. Juarez that works with marginalized populations such as drug users, and sex workers, conducted and managed all of the recruitment efforts as well as all of the interviews. Outreach workers at Compañeros International recruited and interviewed participants from the target population at specific



locations and venues such as the 'party scene' and the community. Snowball sampling methods, or recruitment by referral, was used for target population recruitment. This recruitment effort was followed as time and funding constraints allowed. A 5-minute informed consent paper presentation was administered, and signed by the participant before the primary interview took place. The interviews were conducted face-to-face by trained staff from Programa Compañeros and took place in the Programa Compañeros' office or in the field. The interviews were approximately two hours long and were digitally recorded. At the end of the interview, participants received the equivalent of \$30 USD for their time.

The data collection was completed between January 2014 and June 2015. Quantitative responses were collected on paper copies of the questionnaire, then entered into a Statistical Product and Service Solutions (SPSS) ([International Business Machines, 2012](#)) database for analysis. Digital recordings of the qualitative responses were transcribed, by research assistants. Express Scribe Transcription Software ([NCH Software \(NHC\), 2014](#)) and Transana Transcription Software ([Woods David, 2014](#)) were used to transcribe the qualitative portion from the questionnaire. The transcriptions were transcribed verbatim in Spanish. Hence, there are two datasets, one quantitative and one that is qualitative.

#### **4.1.5 Measures**

The quantitative data included data that was collected from questions that assess measures describing the following: socio-demographic characteristics, cross-border mobility, jail or prison, recent meth use, risks involved with meth consumption, drug use, frequency of needle use and sharing, sexual behaviors, and early detection of various outcomes were collected via the parent study instrument. The qualitative portion is focused on initiation into meth use.

## **4.2 SECONDARY DATA ANALYSIS**

### **4.2.1 Measures**

The data analysis will incorporate measures for socio-demographic characteristics, initiation into meth use, recent methamphetamine use, and recent sexual risk behaviors. The measures for initiation into meth use are assessed through both quantitative and qualitative questions.

#### *Quantitative Data*

##### *Socio-Demographic Characteristics*

The following measures assessed socio-economic status and mobility. All of these measures included an option to refuse to answer. Regarding socio-economic status participants were asked their age (years), sex or current gender (man, woman, transgender man, transgender woman, inter-sex, other), sex assigned at birth (male, female), country of birth (United States, Mexico, other), nationality (United States, Mexico, other), and marital status (never married/single, married/common law, separated, divorced, widowed). Other measures involving income and employment in the past 12 months include nature of employment/income (formal, informal, own business, family, friends, charity, loans, selling personal items, pawning, drug sells, running shooting gallery, sex work, pickpocketing/theft, other), and monthly gross income (USD) before taxes. Measures of mobility collected included the following: lived or worked outside of the El Paso/Cd. Juarez area in the last 10 years (yes, no), city of residence and length of stay (El Paso, Cd. Juarez).

Other measures include crossed over to El Paso in the past 12 months and, if so, reasons for going (work, drugs, business, education, family, relationship, pleasure/entertainment, or health related) and not going (gas prices, security, immigration laws, long lines, prior arrest, lack

of documentation, no need) to El Paso in the past 12 months. Ever studied (yes, no), highest level of education completed (elementary, middle school, high school, Technical Career, University), countries studied in and country where most education was completed in (United States, Mexico, other).

### *Initiation into Methamphetamine Use*

Measures describing first time use of meth/tachas/crystal (henceforth summarized as meth) were assessed in quantitative and qualitative questions. The following options were provided to describe context for reasons for first time use. Reasons for using meth included: lover/sexual partner, sex worker, lack of will power, was surrounded by friends and acquaintances who used drugs, husband or partner used drugs, made felt bad by family or arguments, escape reality, drugs were readily available, believed would not get addicted to drugs, did not like the feeling when did not use drugs, not have anything to do, could not find a job, had no social support, the rehabilitation program did not work/did not help, the social help center did not help in finding help services such as job training, education or counseling. Lastly, meth initiation in prison or jail (yes, no) and age at initiation was also assessed. Additional qualitative measures were collected and described below.

### *Recent Methamphetamine Use*

The following measures pertain to recent meth use that refers to meth use in the past 12 months. Meth acquisition was assessed by asking participants where they acquired meth (house or apartment that sells meth, own/partner/friend's house or apartment that sells meth, place of employment, bar or party, public restroom, automobile, street/vacant lot/park/alley, shooting gallery, hotel, other) in the past 12 months. Also, from whom they acquired meth (sexual partner, other sexual partner, close friend, acquaintance, stranger, alone, other) in the past 12 months.

They were also asked if they acquired meth in Cd. Juarez (yes, no), acquired meth in El Paso (yes, no), and if so, how difficult was it to acquire from one year ago (easier, harder).

Meth consumption was assessed by asking participants where they consumed meth in the past 12 months (home or apartment of the person who sells the drug, home or apartment of own/partner/friend, workplace, bar/party clubs, public restroom, car, street/vacant lot/park/alley, shooting gallery, reformatory prison/orphanage/other place of welcome hotel, other) and from whom they consumed meth with overall (principal sex partner, other sexual partner, close friend, acquaintance, stranger, alone, other). Measures collected to assess the number of people that it was used with (number of people) and with whom it shared with (friends, sexual partner, partner, family member, other).

Measures addressing drug use factors include ways in which it has been used (ingested/taken by mouth, smoked, inhaled through nose, snorted by nose, injected, anally, other), forms of consumption (table/pill, liquid, powder, rock, smoke, other), and works used (nothing, pipe, light bulb, syringe, straw, foil, other). Participants were asked if they ever used meth in any of the following ways: orally, smoked, inhaled, snorted through the nose, injected, taken rectally, or other. If yes, participants were asked if it was used in the past 12 months. Lastly, the previous questions were also asked for meth-drug combinations with cocaine, heroin, or other drugs in the past 12 months.

#### *Recent Sexual Risk Behaviors*

In terms of sexual risk behaviors, measures addressed if meth was used two hours before or during sex and how often this was done (never, less than half the time, half the time, more than half the time, always,) in the past 12 months. Transactional sex was defined as whether meth or money was given or received in exchange for sex. Measures assessed if meth or money

was received in exchange for sex (yes, no) in the past 12 months. Additionally, providing meth/money in exchange for sex (yes, no) in the past 12 months was also asked.

### Qualitative Data

#### *Initiation into Methamphetamine Use*

Qualitative measures describing first time use of meth were assessed through a series of open-ended questions. Participants were asked to recall the first time they consumed any drug and the first time they consumed meth. Specifically, they were asked to remember the first time that they used any drug, what they used, where, and with who. They were also asked the same questions but with regards to the first time that they used meth. Participants were also asked how meth was acquired the first time that it was consumed.

#### **4.2.2 Database Managing**

The instrument from the parent study collected both qualitative and quantitative data. The goal of quantifying the qualitative measures was to be able to create and describe a quantitative dataset for initiation into meth. To do this, several steps were performed to prepare the measures for analysis. Variables or identifiers ([Driscoll D, 2007](#)) were created in agreement with contextual factors for initiation into meth use. The contextual factors for initiation into meth use were divided into individual, social, and structural levels. Quantitative variables were created from the quantitative measures and qualitative questions of the dataset with regards to the contextual factors of initiation into meth. The qualitative data was quantified, merged, and reconciled with the measures collected quantitatively. In the data collected, measures for the contextual factors were available quantitatively, qualitatively, or both. The resulting data set contained both quantitative and quantified qualitative data which was then used for analysis.

Table 1 summarizes the contextual factors that were created along with the data source and resulting levels.

**Table 1:** Contextual Factors for Initiation into Meth Use that were created from Quantitative and Qualitative Data.

Pre-determined Identifiers ( <i>Themes</i> )	Source	Levels ( <i>Sub-categories</i> )
<i>INDIVIDUAL</i>		
Ways	Qualitative	<ul style="list-style-type: none"> <li>• Smoked</li> <li>• Inhaled</li> <li>• Injected</li> <li>• Snorted</li> <li>• Taken orally/drunk/ingested</li> <li>• Rectal Insertion</li> </ul>
Works	Qualitative	<ul style="list-style-type: none"> <li>• Pipe</li> <li>• Light bulb</li> <li>• Needle</li> <li>• Straw</li> <li>• Aluminum Paper</li> <li>• Joint</li> </ul>
Forms	Qualitative	<ul style="list-style-type: none"> <li>• Crystal</li> <li>• Tachas</li> <li>• Pill</li> <li>• Rock</li> <li>• Powder</li> <li>• Liquid</li> <li>• Dust</li> <li>• Smoke</li> </ul>
Age	Qualitative Quantitative	Age

Pre-determined Identifiers ( <i>Themes</i> )	Source	Levels ( <i>Sub-categories</i> )
Reason	Qualitative Quantitative	<ul style="list-style-type: none"> <li>• Lack of will power</li> <li>• Was surrounded by friends and acquaintances who used drugs</li> <li>• Husband or partner used drugs</li> <li>• Made felt bad by family or arguments</li> <li>• Escape reality</li> <li>• Drugs were readily available believed would not get addicted to drugs</li> <li>• Did not like the feeling when did not use drugs</li> <li>• Not have anything to do</li> <li>• Could not find a job</li> <li>• Had no social support</li> <li>• The rehabilitation program did not work/did not help</li> <li>• The social help center did not help in finding help services such as job training</li> <li>• Education or counseling</li> <li>• Improve sexual performance</li> <li>• Curiosity</li> <li>• Loneliness</li> <li>• Sadness</li> <li>• For Fun</li> <li>• Break Up</li> </ul>
<i>SOCIAL</i>		
Acquisition	Qualitative	<ul style="list-style-type: none"> <li>• Gift from various people</li> <li>• Given to by various people Bought</li> <li>• Offered</li> <li>• Stolen</li> <li>• Found</li> </ul>
People	Qualitative Quantitative	<ul style="list-style-type: none"> <li>• Lover/Sexual Partner</li> <li>• Sex Worker/Client</li> <li>• Dealer</li> <li>• Friend</li> <li>• Family member</li> </ul>
<i>STRUCTURAL</i>		
City	Qualitative	<ul style="list-style-type: none"> <li>• City</li> </ul>

<b>Pre-determined Identifiers (Themes)</b>	<b>Source</b>	<b>Levels (Sub-categories)</b>
Venue/Event	Qualitative Quantitative	<ul style="list-style-type: none"> <li>• Bar/Club</li> <li>• Jail</li> <li>• Hotel</li> <li>• Business</li> <li>• Park</li> <li>• Personal House</li> <li>• Friend's House</li> <li>• School</li> <li>• Truck Stop</li> <li>• Shooting Gallery</li> <li>• Music Scene</li> </ul>
Space	Qualitative	<ul style="list-style-type: none"> <li>• Restroom</li> <li>• Automobile</li> <li>• Alley</li> <li>• Street</li> <li>• Vacant Lot</li> </ul>

The contextual factors at the individual, social, and structural levels for initiation into meth were created and coded using SPSS. The following are the variables created at the individual level: ways of consumption, works involved in consumption, forms of consumption, age at initiation, and reason for initiation. Variables created at the social level are method of acquisition and people involved at initiation. Finally, variables created at the structural level include city, venue, and the space. For those variables where other responses were specified, common response were considered to be a new variable, these included use of meth in combination with marijuana, alcohol, and hallucinogens. Additionally, the outcome, gender, was recoded from (woman, man, trans woman, trans man, and intersex) to (woman/trans woman and man/trans man).

### *Individual Factors*

Regarding variables at the individual level, the variable for ways of consumption had its source in the qualitative questions for initiation into meth use. The variable was created from the



following possible responses: ingested, smoked, inhaled, snorted, injected, rectal, or other. The variable for forms of consumption has its source within the qualitative questions as well. It was created from the following possible responses: pill, liquid, dust, powder, rock, smoke, or other. The variable for works involved in consumption was created from the following possible responses: nothing, pipe, light bulb, needle, straw, aluminum paper, or other. Its source comes from the qualitative questions.

Age at first use was created from the quantitative data collected, specifically the measure for age at initiation into meth. Reason for initiation was created from the qualitative questions and the quantitative measure for reasons for using meth. The possible responses for the measure for reasons for initiation include people and various other reasons in the options. The variable for reason for first time use was created from the following possible responses: lack of will power, was surrounded by friends and acquaintances who used drugs, husband or partner used drugs, made felt bad by family or arguments, escape reality, drugs were readily available, believed would not get addicted to drugs, did not like the feeling when did not use drugs, not have anything to do, could not find a job, had no social support, the rehabilitation program did not work/did not help, the social help center did not help in finding help services such as job training, education or counseling.

### *Social Factors*

At the social level, the variable for method of acquisition was created from the qualitative questions. The possible responses for the variable for acquisition were created from the following: gift from various people, given to by various people, bought, offered, or stolen. The variable for people involved at initiation was created from the qualitative questions and the

quantitative measure for reasons for using meth. The variable was created from the responses as they pertain to people, these included: lover/sexual partner and sex worker.

### *Structural Factors*

At the structural level, the variable for city at first time use was created from the qualitative questions. The possible responses for the variable included names of cities such as Cd. Juarez and El Paso. The variable for venue at first time use was created from the qualitative questions and the quantitative measures for space where meth was obtained and started using meth in jail or prison. The possible responses for this variable included bar/club, jail, hotel, business, park, personal/friend's house, school, truck stop, shooting gallery, or other. Finally, the variable for space at first time use will be created from the qualitative questions and its possible responses include restroom, automobile, alley, street, and vacant lot. Once the variables were created, the qualitative data was quantified in order for it to be merged with the rest of the quantitative data.

### *Quantifying Qualitative Data*

The first step in quantifying qualitative data was to reduce qualitative data from qualitative mediums or instruments such as interviews, documents, and observations. According to Sandelowski, this means that qualitative data must be reduced into items, or variables that should mean only one thing ([Sandelowski, 2000](#)). No other meaning can be ascertained from the quantified item nor can the items be interpreted any other way by different people. The aim of this reducing or labeling procedure is to be able to represent the quantified item numerically, or to code it. Pre-determined themes or variables can then be created from these reduced identifies. These pre-determined themes have been defined as corresponding identifiers ([Driscoll D, 2007](#)). The pre-determined identifiers for initiation into meth use are organized into individual, social,

and structural contextual factors. These identifiers served as the created variables for the data set, as listed above.

In this study, reducing or labeling the narratives from the qualitative questions involved simultaneously listening to the audio and reading the transcriptions that cover the qualitative questions. During this process, the pre-determined identifiers, such as venue for initiation into meth, were identified within the narratives. Once identified, they were coded into a spreadsheet with appropriate labeling. For example, while reading the transcript and listening to the audio an identifier for method of acquisition is identified for first time use of methamphetamine, say given for free by a friend. That identifier for that particular variable was coded into method of acquisition at first time use in the spreadsheet. Using the same method of reducing or labeling and coding, the rest of the qualitative data was quantified.

A separate quantifying process on a segment of the qualitative data set was completed by a study assistant. This was done to ensure that the same identifiers identified in this study can be reached independently by other people. The dataset from the study assistant was reviewed and the identifiers were found to be very similar to the identifiers used in this study. Only small differences in specific language and word usage were found. If any of the responses differed, those identifiers were quantified again to check if any errors were made.

The database containing the quantified data that was coded into a spreadsheet and coded, then exported into SPSS. During the coding process several measures were altered or recoded. Ways of meth use at initiation was recoded into the following levels: taken orally, smoked, inhaled, snorted, or injected. Forms in which meth was used at initiation was then recoded to include only 'crystal', pill, and rock. Works used to use meth at initiation was recoded to pipe, light bulb, syringe, aluminum foil, and other. Reason for initiation into meth was recoded into

seven separate measures. These included curiosity, peer pressure, wanted another drug/drug not available, enjoyment/pleasure, stay awake/energy, sexual pleasure/performance, and other.

Acquisition of meth use at initiation was recoded into given to by friend(s), given to by family, given to by partner, bought from dealer, and other. People present during initiation into meth use was recoded into stable partner, friend(s), family, sex work client, sex partner, and other. City at initiation was recoded into Cd. Juarez, El Paso, other city in Mexico, and other city in the U.S. Venue of initiation into meth use was re-labeled to include both venues and events of initiation into meth use. This was due to common responses from participants that usually provided the name of an event and the name of a place, the name of an event but not the name of a place, or the name of a place but not the name of an event. This measure was also recoded to include the levels club, house, no venue/musical event, bar, jail/prison, and other. Finally, space of initiation into meth use was recoded into car, jail cell, pool, private room, restroom, under the bridge, and up in a tree.

Furthermore, the pre-determined variables of the contextual factors for initiation into meth use were reviewed and any emerging themes were summarized. Additionally, since some measures that were created have qualitative, quantitative, or both types of sources, they had to be reconciled after being merged.

#### *Merging Data and Reconciling Measures*

The SPSS database containing the quantified qualitative database was merged with the original SPSS database containing the quantitative data collected. The resulting quantitative data set contained the desired data for statistical analysis. Differences in responses from the merged variables of the quantified database and the quantitative database yielded variables that had both

quantitative and qualitative sources. Variables that were measured both qualitatively and quantitatively were reconciled into one measure once in SPSS.

The following variables, as shown in Table 2, were reconciled from both the quantitative measures and the quantified qualitative measures created: venue at initiation and people involved at initiation. For use in the analysis, they were each reconciled for use in the quantitative analysis. Initiation into meth use was assessed in the quantitative data. It was reconciled with the measure for venue at initiation created from the qualitative data. Similarly, the measure for people involved at initiation was reconciled with the quantitative measure for reasons for using meth. Specifically, from the responses as they pertain to people present at first time use, these included: lover/sexual partner and sex worker.

**Table 2:** Reconciliation Measures

<b>Reconciliation Measures</b>	
<i><u>Variable</u></i>	<i>Source: Question #</i>
Age at Initiation	Quantitative: E22 Qualitative: E1-E2
Venue at Initiation	Quantitative: D9a Qualitative: E1-E2
People present during Initiation	Quantitative: E17 Qualitative: E1-E2
Reason for Initiation	Quantitative: E17 Qualitative: E1-E2

The following variables were not reconciled although they were initially intended to be. Age at first use was not reconciled with the quantitative measure age at initiation into meth use. This was due to the quantitative measure having responses for all participants while these did not come up in the qualitative portion of the data collection. The quantified measure captured responses that differed throughout. For example, the quantified measure might have captured age at first use of ‘crystal’ meth while another response might have included age at first use of meth in pill form. The quantitative measure uniformly collected the information for one measure throughout. Reason for initiation was not reconciled and instead recoded into seven separate measures as described previously. The response counts for these measures were used assuming a response minus the “No” response and the missing responses.

#### **4.2.3 Statistical Analysis**

Univariate, bivariate, and multivariate analysis were conducted. Data analysis was conducted using SPSS (v.22.0). Significant associations by gender were determined with  $p\text{-value} < 0.05$ . Marginally significant associations were determined with  $p\text{-value} < 0.01$ .

##### *Univariate Analysis*

Univariate analysis includes descriptive statistics for all measures. For categorical variables overall sample size (N), frequency, and percents (%) were provided. Normality was assessed for all continuous variables using the value for skewness and assessing the symmetry and bell shape of the histogram. For continuous variables that are normally distributed sample size (N), mean, and standard deviation was provided. Median and quartiles was provided when data is not normally distributed.

##### *Bivariate Analysis for Gender Differences*

Gender differences were determined through bivariate analysis. Gender is the outcome and was used as a binary variable (women/transwomen and men). To assess the association between continuous variables and gender, two-sample t-test was used. If it was not normally distributed, the Mann-Whitney U-Test was used. To assess the association between binary categorical variables and gender, Pearson Chi-Square Test was used. If the expected cell count was less than five for at least one cell, Fisher's Exact Test was used. To assess the association between categorical variables (more than two levels) and gender, Pearson Chi-Square Test was used. If the expected cell count was less than five for at least one cell, then the Likelihood Ratio Test was used.

#### *Multivariate Analysis*

When socio-demographic variables differed by gender, analysis was adjusted for these variables using appropriate multivariate analysis.

#### **4.2.4 IRB Approval**

The Collaborative Institutional Training Initiative (CITI) courses; Social and Behavioral Researchers (Faculty & Students) and Social and Behavioral Responsible Conduct of Research courses were completed on 09/23/2014 and 09/17/2014, respectively. The University of Texas at El Paso International Review Board (IRB) approved the parent study "Social and Contextual Vulnerability on the U.S.-Mexico Border" (164832-5) through August 19, 2016 under the Principal Investigator Dr. Oralia Loza and Co-Principal Investigators Dr. Joao Ferreira-Pinto, Rebeca Ramos, and Maria Elena Ramos. The Department of Social Services of Chihuahua (Servicios de Salud de Chihuahua) also reviewed and approved the parent study for human subjects research. This secondary data analysis was submitted to the UTEP IRB for exception. The title of this secondary data analysis was "Gender Differences in Initiation into

Methamphetamine use in a Mexico-U.S. Border City” (839563-1). This study IRB approved the exception on December 9<sup>th</sup>, 2015.



## **CHAPTER 5: RESULTS**

The results presented in this chapter include summaries of the qualitative themes found during the quantifying process. The quantitative section includes a summarization of the results (Table 3). Univariate and bivariate results will be presented for socio-demographic characteristics, initiation into meth use, recent meth use, and recent sexual risk behaviors.

**Table 3:** Results

	OVERALL			WOMEN +			MEN			
	N	Freq	%	N	Freq	%	N	Freq	%	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	
SOCIODEMOGRAPHIC CHARACTERISTICS										
Age (Years)	150	30.9	8.9	50	29.88	6.962	100	31.5	9.808	
Gender recoded	150									
Women/Trans		50	33.3%							
Man		100	66.7%							
Country of birth	150			50			100			
Mexico		119	79.3%		42	84%		77	77%	
United States		31	20.7%		8	16%		23	23%	
Marital status	150			50			100			**
Single/Never Married		84	56%		27	54%		57	57%	
Married		53	35.3%		22	44%		31	31%	
Divorced		6	4%		0	0%		6	6%	
Separated		4	2.7%		0	0%		4	4%	
Widow		3	2%		1	2%		0	0%	
Main source of income in the last 12 mos.										
Formal employment with salary/income	149	76	51%	50	22	44%	99	54	54.5%	
Informal employment/casual employment	149	53	35.6%	50	14	28%	99	39	39.4%	
Own business	149	20	13.4%	50	9	18%	99	11	11.1%	
Money given by family/partner	149	69	46.3%	50	26	52%	99	43	43.4%	
Money given by friends	149	29	19.5%	50	14	28%	99	15	15.2%	*
Charity	149	28	18.8%	50	9	18%	99	19	19.2%	
Loans from friends or acquaintances	149	47	31.5%	50	14	28%	99	33	33.3%	
Selling items obtained/owned	149	62	41.6%	50	17	34%	99	45	45.5%	
Pawning	149	67	45%	50	21	42%	99	46	46.5%	
Drug sales	149	45	30.2%	50	12	24%	99	33	33.3%	
Running shooting gallery	149	17	11.4%	50	4	8%	99	13	13.1%	
Commercial sex work	149	28	18.8%	50	18	36%	99	10	10.1%	**
Pickpocketing/ theft	149	26	17.4%	50	6	12%	99	20	20.2%	
Other	149	31	20.8%	50	10	20%	99	21	21.2%	
None	149	--	--	50	0	0%	99	0	0%	
Monthly income before taxes, including legal and illegal income in the last 12 mos.	146			50			96			
<\$80 USD		2	1.4%		1	2%		1	1%	
\$80 - \$119.92 USD		5	3.4%		2	4%		3	3.1%	
\$120 - \$159.92 USD		7	4.8%		2	4%		5	5.2%	
\$160 - \$199.92 USD		15	10.3%		3	6%		12	12.5%	
\$200 - \$239.92 USD		5	3.4%		3	6%		2	2.1%	
\$240 - \$279.92 USD		10	6.8%		4	8%		6	6.3%	
> \$280 USD		102	69.9%		35	70%		67	69.8%	
Nationality										
Mexican	150	121	80.7%	50	43	86%	100	78	78%	
North American	150	30	20%	50	7	14%	100	23	23%	
From another country	150	--	--	50	0	0%	100	0	0%	
Lived/worked outside of Juarez/El Paso in last 10 years	150	69	46%	50	17	34%	100	52	52%	**
Currently living in El Paso	150	17	11.3%	50	4	8%	100	13	13%	
Time lived in El Paso (years )	19	14.58	12.098	4	29.2	4.349	14	10.6	10.664	**
Currently living in Ciudad Juarez	150	133	88.7%	50	45	90%	100	88	88%	
Time lived in Ciudad Juarez (years )	132	20.06	12.505	41	19.3	10.955	81	19.5	12.898	
Has crossed over to El Paso in the last 12 mos.	150	67	44.7%	50	21	42%	100	46	46%	

	OVERALL			WOMEN +			MEN			
	N	Freq	%	N	Freq	%	N	Freq	%	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	
Reasons for going to El Paso										
Work	67	13	19.4%	21	0	0%	46	13	28.3%	**
Drugs	67	13	19.4%	21	5	23.8%	46	8	17.4%	
Business	67	3	4.5%	21	1	4.80%	46	2	4.3%	
Education	67	2	3%	21	0	0%	46	2	4.3%	
Family	67	22	32.8%	21	9	42.9%	46	13	28.3%	
Partner/relationship	67	4	6%	21	0	0%	46	4	8.7%	
Pleasure/entertainment	67	21	31.3%	21	7	33.3%	46	14	30.4%	
Health services/medical attention	67	2	3%	21	1	4.8%	46	1	2.2%	
Other	67	5	7.5%	21	1	4.8	46	4	8.7%	
Reasons for not going to El Paso										
Price of gasoline	150	--	--	30	0	0%	56	0	0%	
Security	86	4	4.7%	30	1	3.3%	56	3	5.4%	
Immigration laws	86	35	40.7%	30	10	33.3%	56	25	44.6%	
Long lines	86	2	2.3%	30	2	6.7%	56	0	0%	
Prior arrest	86	21	24.4%	30	6	20%	56	15	26.8%	
Fear of future arrest	86	26	30.2%	30	7	23.3%	56	19	33.9%	
Lack of documentation	86	69	80.2%	30	23	76.7%	56	46	82.1%	
No need	86	15	17.4%	30	5	16.7%	56	10	17.9%	
Other	150	12	14%	30	6	20%	56	6	10.7%	
Have studied	150	150	100%	50	50	100%	100	100	100%	
Highest level of education completed	150			50			100			
Elementary		10	6.7%		4	8%		6	6%	
Completed Elementary		8	5.3%		2	4%		6	6%	
Middle School		23	15.3%		10	20%		13	13%	
Completed Middle School		15	10%		3	6%		12	12%	
High School		26	17.3%		7	14%		19	19%	
Completed High School		14	9.3%		4	8%		10	10%	
Technical Career		7	4.7%		1	2%		6	6%	
Completed Technical Career		3	2%		1	2%		2	2%	
University		27	18%		10	20%		17	17%	
Completed University		13	8.7%		8	16%		5	5%	
Other		4	2.7%		0	0%		4	4%	
Studied in Mexico	150	124	82.7%	50	41	82%	100	83	83%	
Studied in the United States	150	54	36%	50	14	28%	100	40	40%	
Studied in other country	150	--	--	50	0	0%	100	0	0%	
Country where most of education was completed	149			50			99			
Mexico		108	72%		40	80%		68	68.7%	
United States		41	27.3%		10	20%		31	31.3%	
INITIATION INTO METH USE										
Age at initiation into meth use ( <i>Years</i> )	150	20.92	6.95	50	20.8	6.032	100	21	7.388	
City of initiation into meth use	64			20			44			*
Cd. Juarez, MX		33	51.6%		10	50%		23	52.3%	
El Paso, TX		5	7.8%		1	5%		4	9.10%	
Other City in Mexico		11	17.2%		7	35%		4	9.10%	
Other City in U.S.		15	23.4%		2	10%		13	29.5%	
Venue/Event of initiation into meth use	89			28			61			
Club		32	36%		12	42.9%		20	32.8%	
House		25	28.1%		8	28.6%		17	27.9%	
No Venue/Musical Event		17	19.1%		6	21.4%		11	18%	
Bar		3	3.4%		0	0%		3	4.9%	
Jail/Prison		2	2.2%		1	3.6%		1	1.6%	
Other		10	11.2%		1	3.6%		9	14.8%	

	OVERALL			WOMEN +			MEN			
	N	Freq	%	N	Freq	%	N	Freq	%	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	
Space of initiation into meth use	9			2			7			
Car		2	22.2%		0	0%		2	28.6%	
Jail Cell		1	11.1%		1	50%		0	0%	
Pool		1	11.1%		0	0%		1	14.3%	
Private Room		1	11.1%		1	50%		0	0%	
Restroom		1	11.1%		0	0%		1	14.3%	
Under the Bridge		2	22.2%		0	0%		2	28.6%	
Up in a tree		1	11.1%		0	0%		1	14.3%	
Ways Meth was used at Initiation	80			21			59			
Taken Orally		20	25%		5	23.8%		15	25.4%	
Smoked		44	55%		11	52.4%		33	55.9%	
Inhaled		1	1.3%		0	0%		1	1.7%	
Snorted		12	15%		4	19%		8	13.6%	
Injected		3	3.8%		1	4.8%		2	3.4%	
Forms in which meth was used at initiation	137			42			95			
Crystal		72	52.6%		21	50%		51	53.7%	
Pill		64	46.7%		21	50%		43	45.3%	
Rock		1	0.7%		0			1	1.10%	
Works used to use meth at initiation	38			10			28			
Pipe		6	15.8%		2	20%		4	14.3%	
Light Bulb		23	60.5%		5	50%		18	64.3%	
Syringe		1	2.6%		0	0%		1	3.6%	
Aluminum Foil		5	13.2%		2	20%		3	10.7%	
Other		3	7.9%		1	10%		2	7.1%	
Acquisition of meth at initiation	112			36			76			
Given to by Friend(s)		61	54.5%		18	50%		43	56.6%	
Given to by Family		11	9.8%		4	11.1%		7	9.2%	
Given to by Partner		9	8%		5	13.9%		4	5.3%	
Bought from Dealer		21	18.8%		6	16.7%		15	19.7%	
Other		10	8.9%		3	8.3%		7	9.2%	
People present during initiation into meth use	122			41			81			**
Stable Partner		10	8.2%		7	17.1%		3	3.7%	
Friend(s)		87	71.3%		26	63.4%		61	75.3%	
Family		12	9.8%		2	4.9%		10	12.3%	
Sex Work Client		3	2.5%		3	7.3%		0	0.0%	
Sex Partner		5	4.1%		1	2.4%		4	4.9%	
Other		5	4.1%		2	4.9%		3	3.7%	
Reasons for initiation										
Curiosity	150	62	41.3%	50	21	42%	100	41	41%	
Peer Pressure	150	32	21.3%	50	10	20%	100	22	22%	
Wanted another drug/Drug not available	150	7	4.7%	50	1	2%	100	6	6%	
Enjoyment/Pleasure	150	60	40%	50	24	48%	100	36	36%	
Stay Awake/Energy	150	10	6.7%	50	3	6%	100	7	7%	
Sexual Pleasure/Performance	150	16	10.7%	50	4	8%	100	12	12%	
Other	150	17	11.3%	50	5	10%	100	12	12%	
RECENT METH USE (past 12 mos.)										
Amount of different people meth was used with	150	33.4	83.493	50	9.8	15.332	100	45.3	99.753	**
Shared meth with										
Friends	145	137	94.5%	48	47	97.9%	97	90	92.8%	
Sexual partner(s)	145	36	24.8%	48	15	31.3%	97	21	21.6%	
Partner	145	21	14.5%	48	10	20.8%	91	11	11.3%	
Family member	145	34	23.4%	48	8	16.7%	97	26	26.8%	
Other	145	23	15.9%	48	4	8.3%	97	19	19.6%	*

	OVERALL			WOMEN +			MEN			
	N	Freq	%	N	Freq	%	N	Freq	%	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	
Locations where meth was acquired										
House or apartment that sells meth	149	35	23.5%	50	15	30%	99	20	20.2%	
Own/partner's/friends house or apartment that sells meth	149	40	26.8%	50	12	24%	99	28	28.3%	
Place of employment	149	2	1.3%	50	0	0%	99	2	2%	
Bar or party	149	83	55.7%	50	30	60%	99	53	53.5%	
Public bathroom	149	--	--	50	0	0%	99	0	0%	
Automobile	149	1	0.7%	50	0	0%	99	1	1%	
Street/vacant lot/park/alley	149	50	33.6%	50	16	32%	99	34	34.3%	
Shooting gallery	149	8	5.4%	50	1	2%	99	7	7.1%	
Jail/reformatory/orphanage	149	1	0.7%	50	0	0%	99	1	1%	
Hotel	149	11	7.4%	50	7	14%	99	4	4%	**
Other	149	21	14.1%	50	5	10%	99	16	16.2%	
Meth was acquired from whom										
Main sexual partner	150	14	9.3%	50	8	16%	100	6	6%	*
Other sexual partner	150	7	4.7%	50	5	10%	100	2	2%	**
Close friend	150	96	64%	50	34	68%	100	62	62%	
Acquaintance	150	40	26.7%	50	15	30%	100	25	25%	
Stranger	150	22	14.7%	50	6	12%	100	16	16%	
Alone	150	2	3.3%	50	3	6%	100	2	2%	
Other	150	44	29.3%	50	12	24%	100	32	32%	
Meth is easier or more difficult to obtain now than a year ago	148			49			99			
Easier		66	44.6%		17	34.7%		49	49.5%	
More Difficult		52	35.1%		22	44.9%		30	30.3%	
Same		30	20.3%		10	20.4%		20	20.2%	
Have obtained meth in Cd. Juarez	149	144	96%	50	48	96%	99	96	99%	
Obtained meth in El Paso or other part of the U.S.	82	66	80.5%	30	20	66.7%	52	46	88.5%	**
Ways meth has been consumed										
Ingested/taken by mouth	150	96	64%	50	36	72%	100	60	60%	
Smoked	150	113	75.3%	50	35	70%	100	78	78%	
Inhaled through nose	150	85	56.7%	50	23	52%	100	59	59%	
Snorted by nose	150	96	64%	50	25	50%	100	71	71%	**
Injected	150	43	28.7%	50	13	26%	100	30	30%	
Anally	150	5	3.3%	50	1	2%	100	4	4%	
Other	150	6	4%	50	2	4%	100	4	4%	
Forms in which meth has been consumed										
Tablet/pill	150	91	60.7%	50	36	72%	100	55	55%	**
Liquid	150	29	19.3%	50	10	20%	100	19	19%	
Powder	150	94	62.7%	50	24	48%	100	70	70%	**
Rock	150	75	50%	50	17	34%	100	58	58%	**
Smoke	150	45	30%	50	16	32%	100	29	29%	
Other	150	23	15.3%	50	6	12%	100	17	17%	
Works used to use meth										
Nothing	150	71	47.3%	50	28	56%	100	43	43%	
Pipe	150	75	50%	50	21	42%	100	54	54%	
Light bulb	150	86	57.3%	50	23	52%	100	60	60%	
Syringe	150	40	26.7%	50	26	52%	100	27	27%	
Straw	150	70	46.7%	50	20	40%	100	50	50%	
Foil	150	55	36.7%	50	18	36%	100	37	37%	
Other	150	51	34%	50	17	34%	100	34	34%	

	OVERALL			WOMEN +			MEN			
	N	Freq	%	N	Freq	%	N	Freq	%	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	
Ways meth was used										
Orally	150	82	54.7%	50	31	62%	100	51	51%	
Smoked	150	95	63.3%	50	30	60%	100	65	65%	
Inhaled	150	55	36.7%	50	12	24%	100	43	43%	**
Snorted	150	53	35.3%	50	10	20%	100	43	43%	**
Injected	150	1	0.7%	50	11	22%	100	23	23%	
Taken Anally	150	3	2%	50	0	0%	100	3	3%	
Other	150	1	0.7%	50	0	0%	100	1	1%	
Combinations of meth used together										
Meth and Cocaine	149	70	47%	50	20	40%	99	50	50.5%	
Meth and Heroin	150	33	22%	50	10	20%	100	23	23%	
Meth and Marijuana	150	38	25.3%	50	10	20%	100	28	28%	
Meth and Alcohol	150	19	12.7%	50	8	16%	100	11	11%	
Meth and Hallucinogens	150	9	6%	50	4	8%	100	5	5%	
Other	149	8	5.4%	50	4	8%	99	4	4%	
Locations meth has been consumed in										
Home or apartment of person who sells the drug	150	7	4.7%	50	4	8%	100	3	3%	
Home or apartment of own/partner/ or friend	150	112	74.7%	50	36	72%	100	76	76%	
Workplace	150	4	2.7%	50	1	2%	100	3	3%	
Bars, parties, clubs	150	75	50%	50	27	54%	100	48	48%	
Public restroom	150	3	2%	50	1	2%	100	2	2%	
Car	150	6	4%	50	3	6%	100	3	3%	
Street, vacant lot, park, alley	150	21	14%	50	5	10%	100	16	16%	
Shooting gallery	150	8	5.3%	50	3	6%	100	5	5%	
Reformatory prison, orphanage, or other place of welcome	150	1	0.7%	50	1	2%	100	0	0%	
Hotel	150	22	14.7%	50	10	20%	100	12	12%	
Other	150	9	6%	50	2	4%	100	7	7%	
People meth has been consumed with										
Principal sex partner	150	42	28%	50	21	42%	100	21	21%	**
Other sexual partner	150	16	10.7%	50	5	10%	100	11	11%	
Close friend	150	131	87.3%	50	42	84%	100	89	89%	
Acquaintance	150	12	8%	50	3	6%	100	9	9%	
Stranger	150	3	2%	50	1	2%	100	2	2%	
Alone	150	16	10.7%	50	8	16%	100	8	8%	
Other	150	3	2%	50	1	2%	100	2	2%	
RECENT SEXUAL RISK BEHAVIORS (past 12 mos.)										
Frequency of using meth 2 hours before or during sex	141			50			91			
Never		29	20.6%		10	20%		19	20.9%	
Less than Half the Time		43	30.5%		16	32%		27	29.7%	
Half the Time		21	14.9%		9	18%		12	13.2%	
More than Half the Time		23	16.3%		8	16%		15	16.5%	
Always		25	17.7%		7	14%		18	19.8%	
Received meth or money in exchange for sex	37	29	78.4%	18	14	77.8%	19	15	78.9%	
Gave meth or money to other person in exchange for sex	20	11	55%	2	1	50%	18	10	55.6%	

-- not calculated

\*\* significant p-values < 0.05

\* marginally significant p-values < 0.10

## 5.1 QUALITATIVE THEMES

A common response with regards to the location (including city, venue/event, and space) where meth was initiated that was reported were various clubs and bars throughout Cd. Juarez. Specifically, a distinct club named “Moroccos” appeared numerous times. A total of five participants indicated having initiated meth use in this location: “It was in Moroccos” [*Fue en Moroccos*]; “It was at a rave in Moroccos” [*fue en un rave en el Moroccos*]; “It was at a party in Moroccos” [*fue en una fiesta en Moroccos*]. Out of these five participants, four indicated pills are the form of meth that they consumed at initiation: “It was a red Pisces” [*Esa vez fue una piscis roja*]; “Actually, that day it was a tacha that I tried for the first time” [*Y de hecho fue una tacha lo que ese dia yo probe la primera vez; fue una pila*]. Additionally, out of these five participants, three participants indicated having ingested the meth orally: “I ate it” [*Ya me la comi*]; “It was orally, orally ingested” [*A pues fue oral, este via oral*]. Four participants responded having had friends or family present at initiation and three participants indicated having been younger than 18 years old. All of these factors may indicate that this location may have been a popular location for younger people to initiate meth use in pill form with friends.

Participants responded with their partner as a means to acquire meth and also as a person involved during meth initiation. Out of the ten people who responded having a partner (boyfriend, girlfriend, wife, husband, or sexual partner) all but one also indicated that their partner was the way that they had acquired meth. Some responses included: “She got a hundred, a hundred of crystal and put it in a light bulb and we started to smoke” [*ella agarro un ‘cien’, compro un ‘cien’ de cristal y lo echo en un foco y ya lo empezamos a fumar*], “It was due to my wife that I used crystal” [*fue por parte de mi esposa que use el cristal*]. Seven out of these ten participants also indicated having used crystal meth during initiation. Interestingly enough, only

one of these participants indicated lasting longer in bed as a reason to initiate meth use: “She said that with ‘crystal’ I could last longer during intercourse” [*empezo a comentar que con el cristal podia durar mas para tener relaciones*].

## **5.2 QUANTITATIVE DATA**

### **5.2.1 Univariate Analysis**

All of the study participants are included in the analysis (N=150). All participants were 21 years or older, were Hispanic adults residing in Cd. Juarez, and used meth in the last 3 months, as per the eligibility criteria.

#### *Sociodemographic Characteristics*

The sample consisted of men (N=100), women (N=49), and transwomen (N=1). The mean age for participants was 30.9 (SD=8.97). The majority of participants were males (66.7%) and single or never married (56.0%). The majority of participants reported University as the highest level of education completed (18.0%) followed closely by High School (17.3%) with the majority having reported to have studied in Mexico (82.7%) and having completed most of their education in Mexico (72.0%). Participants reported formal employment with salary/income (51.0%), money given by family/partner (46.3%), and pawning (45.0%) as their main sources of income. The majority of participants reported a monthly income of more than \$280.00 USD in the past 12 months (69.9%).

Most participants were born in Mexico (79.3%) and currently living in Cd. Juarez (88.7%). Of those living in Cd. Juarez the mean number of years living there was 20.1 (SD=12.5). 44.7% of participants reported crossing the border to El Paso in the past 12 months. Of those that crossed the border in the past 12 months 32.8% cited family as a reason to cross, followed by pleasure/entertainment (31.3%), work (19.4%), and drugs (19.4%). Participants



responded with lack of documentation (80.2%), immigration laws (40.7%), and both prior arrest (24.4%) and fear of future arrest (30.2%) as reasons for not crossing the border to El Paso in the past 12 months.

### *Initiation into Meth Use*

The mean age of initiation into meth use was 20.9 (SD=6.9), 20.7 (SD=6) for women/trans and 21 (SD=7.4) for men. Regarding the city of initiation into meth use, 51.6% indicated Cd. Juarez, and 7.8% reported El Paso as the city of initiation. Of the 89 participants who responded with a venue/event of initiation into meth use club (36.0%), house (28.1%), and a musical event (19.1%) were the top responses.

The majority of people who initiated meth indicated having smoked it the first time (55.0%) with oral ingestion being the second most selected response (25.0%). Participants indicated 'crystal' as the form in which meth was used at initiation the most (52.6%) with pill form being the next most commonly used (46.7%). Light bulbs (60.5%), pipes (15.8%), and aluminum foil (13.2%) were the most commonly used equipment to consume meth.

Regarding the acquisition method at initiation 54.5% reported having been given it by friend(s), and 18.8% reported buying it from a dealer. Friend(s) (71.3%), family (9.8%), and stable partner (8.2%) were the people most commonly present during initiation into meth use. Of the participants who gave reasons for initiation into meth use, 41.3% cited curiosity, 40.0% cited enjoyment/pleasure, and 21.3% indicated it was due to peer pressure.

### *Recent Meth Use*

The mean number of different people that meth was used with in the past 12 months was 33.4 (SD=83.5). Participants indicated meth was obtained in bars or parties (55.7%), street/vacant lot/park/alley (33.6%), and house/apartment that sells meth (26.8%). Only 5.4%

indicated obtaining meth from a shooting gallery. Some responses for places where meth was consumed in were at home (74.7%) and bars/parties/clubs (50.0%). A close friend (64.0%), an acquaintance (26.7%), main sexual partner (9.3%), and other sexual partner (4.7%) were cited as people that meth was obtained from in the past 12 months. Friends (94.5%), sexual partner/s (24.8%), and family members (23.4%) were the people most commonly present during recent meth use.

Participants reported different ways, forms, and works of consuming meth in the past 12 months. Smoking (75.3%), snorting (64.0%), and oral ingestion (64.0%) were commonly cited as ways meth had been consumed. Some responses to forms in which meth had been consumed were tablet/pill (60.7%), powder (62.7%), and rock (50.0%). Finally, works used for meth use were light bulbs (57.3%), pipes (50.0%), and straws (47.3%).

Meth and cocaine (47.0%), meth and heroin (22.0%), meth and marijuana (25.3%), meth and alcohol (12.7%), and meth and hallucinogens (6.0%) were reported to have been used in combination by the study participants. A total of 96.0% indicated having obtained meth in Cd. Juarez and 80.5% reported having obtained meth in El Paso or other parts of the United States. A total of 44.6% found meth to be easier to obtain now than a year ago, 35.1% found it more difficult, and 20.3% found it about the same.

#### *Recent Sexual Risk Behaviors*

Of those who indicated having used meth 2 hours before or during sex in the past 12 months 20.6% said never, 17.7% said always, 30.5% responded with less than half the time, and 16.3% responded with more than half the time. Only 29 participants (78.4%) indicated having received meth or money in exchange for sex and only 11 participants (55.0%) indicated giving meth or money to another person in exchange for sex in the past 12 months.

### 5.2.2 Bivariate Analysis

Gender differences were assessed for all factors. Statistically significant differences ( $p\text{-value}<0.05$ ) and marginally significant differences ( $p\text{-value}<0.10$ ) are reported.

#### *Socio-demographic Characteristics*

There was a significant difference in marital status ( $p\text{-value}=0.046$ ). More men (57.0%) than women/trans (54.0%) were single/never married. There was also a marginally significant difference in money given to by friends as the main source of income ( $p\text{-value}=0.61$ ) and significant differences from commercial sex work as a source of income in the past 12 months ( $p\text{-value}<0.001$ ). Almost twice as many women/trans (28.0%) reported being given money by their friends as a main source of income compared men (15.2%) and more than three times as many women/trans (36.0%) reported commercial sex work as their main source of income compared men (10.0%).

There was an association between gender and having lived/worked outside of Cd. Juarez/El Paso in the last 10 years ( $p\text{-value}=0.037$ ). More men (52.0%) than women/trans (34.0%) reported to have lived/worked outside of Cd. Juarez/El Paso. There is a significant difference between the mean time lived in El Paso for men ( $M=10.6$ ;  $SD=10.7$ ) compared to women/trans ( $M=14.6$ ;  $SD=12.1$ ) ( $p\text{-value}=0.004$ ). There was a significant difference in work being the reason for crossing the border in the past 12 months ( $p\text{-value}=0.006$ ), all were men.

#### *Initiation into Meth Use*

Marginally significant gender differences exist for city of initiation into meth use ( $p\text{-value}=0.050$ ) and significant differences exist for people present during initiation into meth use ( $p\text{-value}=0.011$ ). About three times more women/trans (35.0%) than men (9.1%) initiated in a city in Mexico other than Cd. Juarez but men (29.5%) reported initiation in a city in the United

States other than El Paso three times more than women /trans (10.0%). With regards to people present at initiation into meth use, more men (75.3%) than women/trans (63.4%) reported friends present and more women/trans (17.1%) than men (3.7%) reported a stable partner present. Two times more men (12.3%) than women/trans (4.9%) reported family present at initiation.

### *Recent Meth Use*

There is a significant difference between the number of different people meth was used with in the past 12 months for men ( $M=42.3$ ;  $SD=99.8$ ) compared to women/trans ( $M=9.8$ ;  $SD=15.3$ ;  $p\text{-value}=0.001$ ). There is an association between gender and hotel as a place where meth was obtained in the past 12 months ( $p\text{-value}=0.043$ ). More women/trans (14%) than men (4%) reported obtaining meth at a hotel. Marginally significant gender differences exist for those who used meth with people other than friends, partners, or family members ( $p\text{-value}=0.081$ ). More men (19.6%) than women/trans (8.3%) reported having used meth with people other than friends, partners, or family members.

There were marginally significant differences by gender from those who obtained meth in the past 12 months from their main sexual partner ( $p\text{-value}=0.071$ ) and there were also significant gender differences among those who obtained meth from another sexual partner ( $p\text{-value}=0.041$ ). More women/trans (16.0%) than men (6.0%) reported having obtained meth from both their main sex partner or from another sex partner (Men=2.0%; Women/trans=10.0%) in the past 12 months. There were also significant differences by gender for those who consumed meth with their principal sex partner in the past 12 months ( $p\text{-value}=0.007$ ); twice as many women/trans (42.0%) reported using meth with their principal sex partner than men (21.0%).

There were statistically significant differences in those who obtained meth in El Paso or other part of the U.S. ( $p\text{-value}=0.016$ ). More men (88.5%) than women/trans (66.7%) obtained

meth in the U.S. Other significant gender differences exist for those who consumed meth by snorting (p-value=0.012). More men (71.0%) than women/trans (50.0%) reported to have snorted meth. There were significant differences in those who inhaled (p-value=0.023) and snorted (p=0.006) meth in the past 12 months. More men than women inhaled and snorted meth in the past 12 months.

There were also significant gender differences in the forms that meth was consumed. These forms include meth consumed as tablets/pills (p-value=0.045), powder (p-value=0.009), and rock (p-value=0.006). Women/trans (72%) consumed more meth in tables/pill form than men (55.0%). Additionally, more men than women/trans consumed meth in powder (70.0% for men; 48.0% for women/trans) and rock (58.0% for men; 34.0% for women/trans) form.

#### *Recent Sexual Risk Behaviors*

There were no significant gender differences to report in terms of recent sexual risk behaviors.

### **5.2.3 Multivariate Analysis**

Multivariate logistic regression was used to adjust for commercial sex work as a main source of income in the past 12 months, having lived/worked outside of Juarez/El Paso in the last 10 years, years lived in El Paso, and work as a reason for crossing the border in the past 12 months for gender differences at initiation into meth use and recent meth use. Gender differences did not persist in people present at initiation into meth (p-value=0.127) and city of initiation into meth (p-value=0.415). However, marginal gender differences did persist in the measures for meth acquisition from main sexual partner (p-value=0.063) and consuming meth in powder form (p-value=0.052).

## CHAPTER 6: DISCUSSION

### 6.1 CONCLUSIONS

Of the measures assessed for initiation into meth use, the only statistically significant gender differences found were city at initiation and people present during initiation into meth use. Women showed differences with regards to a stable partner or a sex partner in people present at initiation. Cities in Mexico other than Cd. Juarez, and cities in the U.S. other than El Paso at initiation were found to be statistically significant for women and men respectively. Additional significant gender differences among those who consumed meth with their principal sex partner and those who obtained meth from other sex partners indicates a possible trend of meth use within couples, primarily for women. Differences in gender at initiation into meth use due to people present is in accordance with other studies that cite friends or other members of that user's close social network as factors for initiation ([Brecht et al., 2004](#); [Ding et al., 2013](#); [Sheridan et al., 2009](#)). Differences in age at initiation by gender were expected to be found in this sample but were not although some studies have shown that there is a difference ([Dluzen & Liu, 2008](#)) while other studies have specified no differences ([Brecht et al., 2004](#)).

### 6.2 RECOMMENDATIONS

Regarding points of intervention, various strategies can be employed at different contextual factor levels ([McLeroy et al., 1988](#)) to prevent initiation into meth use. In this study differences by gender were found to be at the social and structural contextual levels. At the structural level, the city of initiation differed for men and women. Interestingly enough, more men initiated in cities in the U.S. other than El Paso and more women initiated in cities in Mexico other than Cd. Juarez. A closer look at the data showed that cities and areas for initiation outside of El Paso and Cd. Juarez included cities in the U.S.-Mexico border region. Migration

within Mexico, especially to those states near the U.S. Border have been shown to be associated with substance abuse among Mexican migrants ([Borges et al., 2009](#)). Additionally, the prevalence of substance abuse among Mexicans with no migration experience and no family member in the U.S. was two times as much in urban border regions than migrants ([Borges et al., 2009](#)). An intervention program for migrants and non-migrants that could work in the border region is the “anexos” treatment-infrastructure. “Anexos” are intervention programs created by migrant communities where migrants and immigrants conduct intervention programs with similar formats to the “24 Horas” programs in Mexican and Central American countries with Alcoholics Anonymous’ (AA) materials ([Pagano, 2014](#)). “Anexos” are conducted in Spanish by their own members who are migrants and former addicts, and they also provide and disseminate resources within their community ([Pagano, 2014](#)).

At the social level, people present at initiation demonstrated that people who are close to an individual’s social circle can have an affect on initiating, acquiring and using meth. For factors regarding ways consumed in and works consumed with, various educational efforts to instill safe practices can be made. Regarding forms consumed in educational efforts can be made to inform the population of the detrimental health effects of the different forms of meth. Additionally, there was a high frequency of initiation into meth use at clubs for both men and women. The results seemed to indicate that more women than men initiated meth use at both clubs and bars. Various sexual risk behaviors are associated with drug use in the club scene; these include unprotected sex and having multiple sex partners ([Bao Yan-Ping et al., 2013](#)). Different venues such as clubs and bars or spaces adjacent to the venues could be aimed for intervention locations and distribution of information and literature. Citywide educational efforts for all of these intervention efforts might help address initiation in the club scene.

Friendships and relationships are involved in the primary form of acquisition and person with whom it was consumed with during first time use. Various influences stem from these friendships or relationships that can affect the person's decision to try meth for the first time. Peer interventions in the form of counseling and workshops at the social and structural levels of influence have been shown to lower substance use and abuse in young adults and adolescents ([Griffin K, 2010](#)). Interventions aimed at informing potential users on the impact friends and partners have on their decisions would help ([Cruz et al., 2007](#)). With regards to interventions for couples, behavioral couple's therapy (BCT) has been shown to work in the past for couples with drug abuse problems ([Powers B, Vedel E, & Emmelkamp P, 2008](#)). Other studies have shown BCT "produces more abstinence and fewer substance-related problems, happier relationships, fewer couple separations, and lower risk of divorce than does individual-based treatment" ([O'Farrel & Fals-Stewart, 2000](#)).

The following are the perceived strengths and limitations for the methodology and analysis of this secondary data analysis.

### **6.3 STRENGTHS**

With regards to the methodology, specifically quantifying qualitative data or data sets, having pre-determined themes, questions, or items works best when the study has specific objectives and hypotheses to test. This study had specific pre-determined variables which were derived from contextual factors as well as objectives and hypotheses to test. However, other similar methodologies have shown to use themes or measures that naturally arise during the 'coding' or 'segmenting' of the qualitative data ([Chi, 1997](#)). These alternative methods of quantifying qualitative data are often used when there are no specific hypotheses to test because just as the themes and measures 'naturally' arise from the qualitative data, so do the objectives



and hypotheses. Quantifying and integrating or merging, themes from qualitative data with other quantitative data has been shown to have its advantages in mixed methods analysis ([Driscoll D, 2007](#); [Srnska, 2007](#)). Some studies have shown to effectively use mixed method analysis, described by Creswel, for studies among IDUs on the border cities of Tijuana and San Diego ([Creswell, 2003](#); [Robertson et al., 2014](#); [Sheridan et al., 2009](#)). Mixed methods study designs can also provide a more comprehensive understanding of the research question ([Creswell, 2013](#)).

This study analyzed data through a combined data set of qualitative and quantitative data. This study reached a hard population to asses, that is a Hispanic drug using population. Other strengths include the gap that this study may help fill in the literature. Gaps in the literature regarding gender differences in certain factors of initiation into meth in the border region exist. This study aims to contribute more data to the literature gap. The parent study specifically collected data on specific factors of initiation into meth that may not have been previously collected. This new information from the secondary data analysis may be novel for the literature.

#### **6.4 LIMITATIONS**

The pre-determined variables were created with influence from the ecological model of health promotion and contextual factors that influence substance abuse. However, because there is little available information about initiation into meth use, the variables created might not have been the most appropriate. The variables' reason for initiation into meth and people involved at initiation into meth shared potential responses that might be collected from the qualitative narratives. A reason for initiation might have included a person involved. As such, the variable for reason at initiation had to be recoded into seven separate variables including one that was labeled as peer pressure. Responses that made it clear that a person was not only involved at

initiation but was also the reason were then sorted into this variable. If a person was present but was not the reason for initiation, then the responses was appropriately sorted into the person present at initiation variable. New information that was not intended to be collected arose from the quantifying process. One such piece of information was what participants were doing once they consumed meth. A variable could be formed that would capture the consequences or the direct actions after first time meth use. This information was shared qualitatively. Additionally, the qualitative questions collected by the instrument might not have been answered truthfully or accurately due to the nature of the questions asking about events that may have occurred.

Limitations to the analysis include the missing information due to missing responses for the quantified measures. Various participants did not provide enough of a response to capture sufficient qualitative data. Therefore, qualitative data that was quantified was, at times, incomplete for the measures for the contextual factors that were created to capture this information. Additionally, the possibility of mistakes during transcribing and translation of the qualitative narratives may have affected the data. The misinterpretation of drug oriented slang terms might have also affected both the qualitative themes and quantified measures for initiation into meth use. Finally, the data used for this secondary data analysis was originally collected for a different purpose.

## CHAPTER 7: STRATEGIC FRAMEWORK

There are several frameworks in place for both the United States and the U.S.-Mexico border that have diverse aims and goals to improve the well-being of the various populations residing in those areas. Three organizations have provided frameworks for both of these areas, these are the U.S. Department of Health and Human Services, the U.S.-Mexico Border Health Commission, and the Paso del Norte Health Foundation.

### 7.1 HEALTHY PEOPLE 2020

Healthy People 2020 is a 10-year national plan or framework for the U.S. Department of Health and Human Services that aims to improve the health of Americans. The objectives set for the year 2020 encompass a wide variety of health topics across all aspects of the public health of the United States. Included in the framework, one goal is specifically aimed at addressing substance abuse. Several objectives stem from this goal that aim to reduce illicit drug use as well as increasing treatment and screening for illicit drug use ([U.S. Department of Health and Human Services \(USDHHS\), 2015](#)). However, Healthy People 2020 does not refer to initiation of any illicit substance and focuses on reducing current illicit drug use (target of 7.1% or a 10% improvement), or drug and alcohol use in the last 30 days, and drug induced deaths ([U.S. Department of Health and Human Services \(USDHHS\), 2015](#)). Additionally, most of their primary intervention efforts seem to be aimed at adolescents and alcohol consumption ([U.S. Department of Health and Human Services \(USDHHS\), 2015](#)) and no other efforts for illicit drug use are mentioned.

## **7.2 HEALTHY BORDER 2020**

The U.S.-Mexico Border Health Commission (BHC) aims to provide leadership in order to improve health and quality of life along the border region. The organization facilitates communication, coordination, and collaboration at a bi-national and international level between the United States and Mexico. In the past, the Healthy Border 2020 framework aimed to reduce death and injury caused by substance abuse as well as report unintentional deaths induced by illegal or prescription drugs ([U.S.-Mexico Border Health Commission \(BHC\), 2010](#)). Currently, the framework was aimed at both reducing injuries and deaths caused by substance abuse as well as treating addiction as a mental health disorder ([U.S.-Mexico Border Health Commission \(BHC\), 2015](#)). Secondary intervention methods include providing access to services, education, and trainings on illicit drug use ([U.S.-Mexico Border Health Commission \(BHC\), 2015](#)). Their aims mention daily use of illicit substances and use of illicit substances by adolescents as focus points however, they do not mention any other factors of use of illicit substances such as meth use at initiation or meth use by gender.

## **7.3 PASO DEL NORTE REGIONAL STRATEGIC HEALTH FRAMEWORK**

The Paso del Norte Health Foundation aims to promote health and prevent disease in the Paso del Norte region ([Paso del Norte Health Foundation \(PNHF\), 2012](#)). The Paso del Norte Regional Strategic Health Framework prioritizes substance abuse and drug abuse. The aims of this framework include the reduction of alcohol and drug use among the youth, decrease the prevalence of alcohol and drug abuse among adults, and to establish three substance abuse treatment centers in the Paso del Norte region ([Paso del Norte Health Foundation \(PNHF\), 2012](#)). However, this framework does not specify aims or objectives to specifically target meth

use in the region, additionally the framework does not target initiation into any illicit substance or initiation into meth use ([Paso del Norte Health Foundation \(PNHF\), 2012](#)).

Overall none of the frameworks listed above deal with meth use and initiation into meth use.

## **CHAPTER 8: MPH CORE COMPETENCIES**

Five public health competencies have been adopted by the UTEP Public Health Program to lead the MPH courses, research, training, and student learning. The following core competencies were addressed: Biostatistics, Social and Behavioral Sciences, and Hispanic/Border Health Concentrations.

### **8.1 BIostatISTICS CORE COMPETENCIES**

Biostatistics aims to develop and apply statistical reasoning and methods to address, analyze, and solve issues in various areas of public health. In this secondary data analysis appropriate statistical methodologies were identified and administered. Statistical tests were performed and results were interpreted accordingly. With regards to database management, variables were created, coded, recoded, merged, and some of the created variables were reconciled. Mixed methods were employed by working with both quantitative and qualitative data. Additionally, some qualitative data was quantified for the purpose of data analysis. A data set was also created by merging two other data sets together. Finally, a written and oral presentation were created and presented in which I present my statistical analysis and results.

### **8.2 SOCIAL AND BEHAVIORAL SCIENCES CORE COMPETENCIES**

Social and Behavioral Science aims to address social, behavioral, and cultural factors that related to individuals or populations with regards to health and health disparities. Basic theories, concepts, and models from social and behavioral disciplines used in research and practice are identified, described, and applied. The ecological model was used in the framework for both the parent study and this secondary data analysis. Substance abuse contextual factors, risk factors,

and correlates are identified. These social and behavioral factors were discussed with regards to intervention efforts for meth use and initiation into meth use.

### **8.3 HISPANIC/BORDER HEALTH CONCENTRATION COMPETENCIES**

Hispanic and border health concentrations address a broad scope of health issues. The concentrations addressed here aim to identify public health challenges that face these Hispanic border communities. Sources of public health data that relate to Hispanic and border communities were identified and accessed. Specifically, substance abuse issues with regards meth use and meth use initiation along a U.S.-Mexico border town were addressed. The parent study took place in a U.S.-Mexico border city and the study participants were border and Hispanic people who are part of the cities of Cd. Juarez and El Paso.

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## **CURRICULUM VITA**

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