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Health Risk And Health-Seeking Behaviors Of Migrant And Seasonal Farmworkers On The Us-Mexico Border

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by

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ABSTRACT

Background and Significance

The estimated 1-3 million migrant and seasonal farmworkers (MSFW) employed in the U.S. play a crucial role in assuring the success of the multi-billion dollar agricultural industry and the nation's access to a safe and nutritious food supply. This predominantly Mexican immigrant occupational group is documented to be at-risk for chronic and infectious disease morbidity and premature mortality but published studies are limited which describe their reproductive/sexual health, mental health, substance abuse, and workplace violence situation. Prior studies are especially scant regarding U.S.-Mexico border MSFW.

Objectives and Hypothesis

The major objective of the pilot study was to explore health issues, health screening and health risk behaviors related to reproductive/sexual health, substance abuse, and workplace violence of MSFW working in the Paso Del Norte region of far west Texas and southeastern New Mexico. The first specific study aim was to characterize the reproductive and sexual health history and preventative behaviors, mental health and mental health treatment, substance abuse, and workplace violence. This aim was accomplished by analyzing data collected from in-depth interviews of adult MSFW regarding prevention of pregnancy and sexually transmitted infections, prenatal care, screening behaviors (i.e., cervical, breast, prostate cancer), mental health conditions and treatment, substance abuse (alcohol, illicit drugs, tobacco), and workplace violence including that associated with on the job alcohol consumption

The second specific aim was to investigate factors associated with reproductive and sexual health history and preventative behaviors, mental health and mental health treatment. This aim was carried out analyzing their association with participant sociodemographic, lifestyle,

acculturation, and other predictors. It was hypothesized that age, poverty, low education, and other factors associated with low acculturation reduce health-related knowledge including the importance of cancer screening and other preventative health behaviors.

Methods

This study was part of a larger survey that investigated the health and nutrition of MSFW working in the Paso del Norte region. A site-based convenience sampling strategy was used to recruit prospective MSFW households. Prospective participants aged $\geq$ 18 years who had performed paid farm work during the prior 12-months and who did not have any sensory/developmental conditions that would interfere with their ability to understand and answer questions were eligible for participation. The data were collected from participants during face to face interviews using a modified version of the California Agricultural Worker Health Survey (CAWHS) main instrument and CAWHS male and female health supplements (CIRS, 2002). These contained both closed- and open-ended questions. Categorical data were described as % (*n*) or % (*nl* sample size) in cases where a subset of the study sample is used. Continuous data were described as means ± standard deviations (SD). Bivariate analysis of the differences between proportions was assessed using 2 x 2 contingency table, analyses with corrected X^2 or Fisher's exact test, as appropriate. Students' independent t-test or one-way ANOVA were used to analyze mean differences. Content analysis was employed to analyze the qualitative data from the open-ended questions

Results

The 141 Hispanic study participants were mostly middle-aged ($\bar{x}$= 42 $\pm$ 14.3 yrs; range 18-84 yrs). A majority were Mexican-born (87.2%) males (61.7%) with little formal education

(6.2 ± 3.1 yrs) who had worked an average of 18.8 ± 11.7 years in the U.S. agricultural system (range: 0.8-58 yrs). Two-thirds (67.4%) reported that they were permanent residents of El Paso or Dona Ana counties. Only one-quarter of sexually active participants reported that they/their partners used protection against STI's, mostly male condoms. Non-married participants were more likely than married ones to use protection (P=0.004) as were more recent immigrants from Mexico (P=0.048). Fewer than half (43.3%) of the reproductive age participants reported that they used a pregnancy prevention method. Of these, most relied upon the male condom (31.5%), female sterilization (28.8%), or oral contraceptives to prevent pregnancy (21.9%). The single most frequent reason given for non-use of STI or pregnancy prevention methods was that the participant and/or their partner(s) don't like them or the side effects they cause.

The respective prevalence of lifetime cervical and breast cancer screening was relatively high, i.e., 87% and 61.1%. The two major reasons given by women who had never been screened for cervical or breast cancer was that they didn't like/want the exam and high cost. Only a small minority of men (14.9%) reported that they had ever been screened for prostate cancer. The major reasons that they gave for not undergoing prostate cancer screening was that they were too young or otherwise didn't need it (40.7%), they didn't have enough money, time, or access to health care in order to get it (22.2%), they lacked information on the exam (18.5%), or that they just did not want to have it (11.1%).

One-half (53.9%) of the study participants reported being current drinkers; 13% of these drank most days of the week. One-quarter reported they presently smoked cigarettes or used illicit drugs (6%), mostly marijuana and cocaine. One-sixth of participants reported that they had been diagnosed by a health professional as having a mental health condition, the most common of which was depression (14.2%). Two percent also report suicidal ideation within the past 12-

months. Seven percent reported a personal experience of workplace violence some of which was due to on-the-job drinking in the agricultural fields.

Conclusions and Recommendations

The predominantly middle-aged Hispanic border MSFW in this study appeared to be at potential risk for STI's and unintended pregnancy. On the other hand, the prevalence of lifetime and recent cervical cancer screening, and to a lesser extent, breast cancer screening, was higher than that reported for many other farmworker groups. In contrast, the low prevalence of prostate screening among mostly middle-aged male group is of concern. Excessive use of alcohol including at their job sites places workers at risk for workplace violence and alcohol-related injuries and accidents. The data from this study can be used to develop health education and promotion interventions that are specific to this special immigrant occupational group.

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CHAPTER I

BACKGROUND AND SIGNIFICANCE

Overview of Migrant and Seasonal Farmworkers

The number of migrant and seasonal farmworkers (MSFW) employed in U.S. agriculture has been estimated at between 1.01-3 million (Kandel, 2008; National Center for Farmworker Health, 2009). They play an important role in securing the economic success of the multi-billion dollar U.S. agricultural industry and the access of the population to a safe and nutritious food supply (NCFH, 2009). Moreover, farmworkers are one of the most economically disadvantaged labor groups in the U.S. (NCFH, 2009) as many cannot afford to feed their own families (Essa, 2001; Weigel et al., 2007; Quandt et al., 2004; Harrison et al., 2007). They also work in one of the most dangerous occupational sectors in the U.S., second only to construction in the rate of fatal and non-fatal injuries (Kandel, 2008; CDC, 2006)

Data from national surveys indicate that 75% of MSFW working in the U.S. are immigrants of Mexican descent (U.S. DOL, 2005). At least half of these are believed to be undocumented. Migrant and seasonal farmworkers also tend to be poorly educated with the median years of formal education estimated at six (NCFH, 2009). Many MSFW have poor English language skills (Hansen & Donohoe, 2003; Villarejo et al., 2000). Wages obtained through agricultural work average only $10,000 per year (NCFH, 2009). Despite the difficult conditions under which they work, 80% of hired crop MSFW say that they expect to continue farmwork for another $\geq$ 4 years, ostensibly because agricultural work often serves as an entry point into the U.S. labor market for many immigrants (Kandel, 2008).

Texas is one of the major U.S. states where MSFW work. It has been estimated that approximately 362,724 MSFW are employed in field agriculture, nursery/greenhouse and food

processing in the state (Larson, 2000). The number of MSFW who work in the two contiguous U.S. border counties in the Paso Del Norte region has been estimated at over 10,000 individuals. These are El Paso County, Texas, where the estimated number of MSFW is 4,745 (Larson, 2000) and Dona Ana County, New Mexico, with 6,000 MSFW (Eastman, 1996). More recent estimates are not available.

Overview of Migrant and Seasonal Farmworker Health

Adult migrant and seasonal farmworkers have elevated morbidity and mortality rates compared to the general U.S. population (Hansen & Donohoe, 2003). This higher risk has been linked to multiple influences such as work-related accidents and injuries, substandard living conditions, poverty, poor education, immigrant and/or undocumented status, language and cultural barriers, and reduced health care among others (Arcury & Quandt, 2007; Villarejo, 2003). These occupational groups are more likely to die prematurely compared to the general U.S. population. Specifically, average life expectancy is reported to only be 49 years for MSFW as compared to the national average of 75 years (Sandhaus, 1998). Foreign-born MSFW, in particular, suffer from a higher rate of work-related morbidity and mortality compared to those with a U.S. birthplace (Loh & Richardson, 2004). Not only are adult MSFW at high risk for excessive mortality but so are their offspring. The infant mortality rate among the children of MSFW is twice the national average (Hansen & Donohoe, 2003; Slesinger, et al., 1986).

Chronic health conditions such as adult overweight, obesity and central body adiposity are prevalent among MSFW and their households (Weigel et al., 2007; CIRS, 2002; Poss & Pierce, 2003). For example, the results of the California Agricultural Workers Health Survey (CAWHS) survey of female and male MSFW results revealed that 76% and 81%, respectively, were classified as overweight/obese (CIRS, 2002). Similar results have been reported for other MSFW

groups working in Far West Texas (Weigel et al., 2007; Poss & Pierce, 2003) and other locations (Kandel, 2008; Watson, 1997). Likewise, obesity-related conditions such as type 2 diabetes, hypertension, and hyperlipidemias appear to be common (Weigel et al., 2007; CIRS 2002; Poss & Pierce, 2003; Slesinger, 1992).

Migrant and seasonal farmworkers and their households are disproportionately affected by infectious illnesses. These include a high documented prevalence of tuberculosis (CDC 1992, NCFH, 2009), pneumonia, bronchitis, and other lower- and upper- respiratory illnesses (Garcia et al., 1996; DHHS, 2007). They also are at-risk for foodborne and other gastrointestinal infections, as well as urinary tract infections (Arcury & Quandt, 2007; Villarejo, 2003; Hansen & Donahue, 2003; Dever, 1999; Slesinger, 1992).

Farmwork is known to be one of the most dangerous occupations in the U.S. Migrant and seasonal farmworkers are frequently exposed to multiple work-related sources of injuries and accidents. Specific examples of occupation-related conditions include musculoskeletal and soft-tissue injuries (Kandel, 2008; Villarejo & McCurdy, 2008; U.S. DOL, 2005; CIRS, 2002; Hansen & Donahue, 2003), physical injury caused by whole body vibrations from farm machinery, unpaved farm roads, and vehicular accidents (Villarejo & McCurdy, 2008; McCurdy et al., 2003; Braund & Alexander, 2007.; NIOSH, 2010), eye (Lacy et al., 2007) and skin injuries (Hansen & Donahue, 2003; Cooper et al., 2006), hearing loss (Rabinowitz et al., 2005), and heat stress (NCFH, 2009). In addition, many suffer adverse health effects from acute and chronic exposure to toxic pesticides, fertilizers, and organic/inorganic dust sources, not to mention skin disorders, such as dermatitis (NCFH, 2009; Villarejo & McCurdy 2008; McCurdy et al., 2003; Acury et al., 2006; Mills et al., 2009; Hansen & Donohoe, 2003).

Health Care

Migrant and seasonal farmworkers are documented to have poor access to medical care especially preventative health services. The reported barriers include low income (NCFH, 2009), lack of health insurance and sick leave (Hansen & Donohoe, 2003; Villarejo, 2003;), high cost of medical care (Kandel, 2008), frequent mobility (NCFH, 2009; Arcury & Quandt, 2007), long working hours (Larson, 2002), geographic isolation (Sanchez et al., 2004) lack of transportation (Kandel, 2008; Arcury & Quandt, 2007; Couglin & Wilson, 2002) and linguistic, cultural, and geographic barriers (Poss & Pierce, 2003; Lombardi, 2002; NCFH, 2009), fear of job loss for taking time off to seek medical care (Kandel, 2008; NCFH, 2009), and feeling unwelcomed (Kandel, 2008). For these reasons, MSFW often seek health care only as a last resort (Villarejo, 2003). Evidence of this comes from the results of the CAWHS survey which indicated that fewer than half of adult male MSFW had visited a health care provider during the prior 2-year period (CIRS, 2002). In addition, nearly one-third reported that they had never previously visited a medical care provider of any kind during their lifetime (CIRS, 2002).

Published studies that describe other health issues and health behaviors of MSFW are much more limited especially with respect to reproductive and sexual health, oral health, substance abuse, and workplace violence. These are important issues.

Reproductive and Sexual Health

Sexually Transmitted Infection and Pregnancy Prevention

Published data reporting on the prevalence of HIV, other STI's and risky sexual behaviors among MSFW in the United States are limited. Seroprevalence studies suggest that the prevalence of HIV/AIDS ranges from 2.6%-13% depending upon the group studied (Jones et al.,

1992; CDC, 1992; NCFH, 2009). Sexually transmitted infections such as gonorrhea, syphilis, chlamydia, and genital herpes are the leading causes of reproductive health problems, such as infertility, pelvic inflammatory disease (PID) in women and they also facilitate HIV transmission (Sanchez et al., 2004; National Center for HIV, STD, and TB prevention-CDC, 2001). Wong and colleagues (2003) examined the prevalence of STI's in a sample of male Hispanic urban migrant day laborers in San Francisco. The respective prevalence of syphilis, gonorrhea, and chlamydia was reported to be 0.4%, 0.5%, and 3.5%.

It has been reported that many male MSFW engage in certain behaviors that appear to place them and their partners at high risk for contracting STI's (Levy, et al., 2005). These high-risk behaviors include unprotected sex especially with sex workers, multiple partners, and needle sharing among family members for injecting vitamins, antibiotics and other prescription and non-prescription medications (NCFH, 2009; Parrado et al., 2004). The risk for HIV and other STI's is reported to be increased due to the infrequent use of condoms, poor safe-sex knowledge, and high-risk sexual behaviors are known contributors, to sexually transmitted infections (Wong et al., 2003). Other factors include permissive male sexual norms, excessive alcohol consumption, use of injected illicit drugs, and limited access to health services also increases MSFW risk (Hirsch et al., 2002; Worby & Organista, 2007). Furthermore, it has been reported that immigrant women such as Hispanic MSFW are less likely to use condoms because they lack the power to speak up against their partner wishes and request that they use them (Kandula, et al., 2004). Many Hispanic MSFWs are not successful in securing partner condom use because they appear to lack awareness of their importance in preventing STI's, because of the negative connotation with promiscuity (Arcury & Quandt, 2007; Organista et al., 2004) and partners claim lesser sensitivity/pleasure (Organista et al., 1998). Further research suggests that many Hispanic

men compared to Hispanic females are not successful in securing condom use and there are negative beliefs about condom use (Organista et al., 2000; Ogranista et al., 1998; Marin et al., 1993).

Prenatal Health Care

Only a limited amount of information is available regarding the prenatal health and health care characteristics of MSFW. It has been suggested that pesticide and chemical exposures, prolonged standing, bending, and overexertion (Hansan & Donohoe, 2003; Mobed, et al., 1992; McCualey et al., 2006) may increase the risk of MSFW and other women living on or near farms for infertility, miscarriage, and other certain other adverse outcomes (NCFH, 2009; Frank, et al., 2004). Inadequate or late prenatal care is another risk factor associated with suboptimal pregnancy outcome. Similar to health care in general, several studies suggest that MSFW have decreased access to prenatal care. For example, a survey conducted by the *Maternal Care Coordination for Migrant Farmworker Women* survey revealed that only 42% of women had any first trimester prenatal care compared to 76% of women nationally (Rosenbaum & Shin, 2005). In addition, Arcury & Quandt (2007) reported that only four-tenths of the North Carolina MSFW in their study received any prenatal care. Data gathered during 1989-1993 on pregnancy-related behaviors revealed that the proportion of MSFW women who did not meet the Institute of Medicine's prenatal weight gain recommendations was higher than that of other women (52% vs. 32%) in the survey (CDC, 1997). However, consistent with what has been reported for other Hispanic groups (“Hispanic paradox”), the prevalence of low birthweight, very low birthweight, preterm birth and small-for-gestational-age infants born to MSFW was comparable to non-migrants (CDC, 2007).

Cervical Cancer Screening

Epidemiological studies of cervical cancer in Hispanic and other MSFW are lacking. However, Hispanic women are documented to be at increased risk for developing cervical cancer (ACS, 2010), invasive forms of cervical cancer (Coughlin & Wilson, 2002), and cancer mortality compared to the general U.S. population (ACS, 2010; Mills et al., 2009; Boucher & Schenker, 2002). The high mortality rates and other adverse outcomes reported for U.S. Hispanic groups have been attributed to their lower screening rates (Boucher & Schenker, 2002; Formenti et al., 1997). Cervical cancer screening rates are much lower for foreign-born women Hispanics compared to those born in the U.S., i.e., 61% vs. 83% (Schleicher, 2007; Swan et al., 2003).

Little is known about the cervical cancer knowledge and cervical cancer screening practices of MSFW in the United States. The few studies that have been conducted suggest that many do not know about either the disease or screening tests (pap smear) designed to detect it (Couglin & Wilson, 2002; Hooks et al., 1996; Lantz et al., 1994; Boucher & Schenker, 2002). As might be expected, the factors reported as associated with receiving screening were higher education and income, being married, and longer time of residence in the U.S., and younger age (Skaer et al., 1996). Individual factors such as fatalism, incomplete or conflicting beliefs about cancer and cancer screening, fear and anxiety about cancer, and embarrassment and shame over physical examinations were other barriers (Goldsmith & Sisneros, 1996).

Breast Cancer Screening

The population incidence of breast cancer and breast cancer-related mortality is reported to be reduced in Hispanic compared to non-Hispanic women. However, they are more likely to have late stage cancer diagnosis and have poorer survival (Coughlin & Wilson, 2002). Prior

studies have reported that many Hispanic women appear to lack awareness about cancer in general such as cancer warning signs and symptoms, the importance of early detection, and cancer screening guidelines (Coughlin & Wilson, 2002; Carpenter & Colwell, 1995; Fernandez et al., 1998; Gonzalez, 1990; Ramirez et al., 2000; Suarez et al., 1997). Likewise, acculturation and feelings of shame, embarrassment, and discomfort related to breast examinations are other factors that influence breast cancer screening in Hispanic women (Coughlin & Wilson, 2002).

Published data describing breast cancer and mammography screening among MSFW are limited. Palmer and associates (2005a) reported that only 38% of female SE Texas MSFW aged $\geq$ 50 years or household members reported having mammography during the previous two year period. This is only half the national average for Hispanic women and other U.S. ethnic groups. The reported barriers to breast cancer screening are reported as similar to those reported for other reproductive services such as a lack of support from partners and family (Peek & Han, 2004), low acculturation (Fernandez et al., 2005), lack of health insurance (Fernandez, et al., 2005, NFCH, 2009), inability to pay the out-of-pocket medical costs (Villarejo, 2003; Skaer et al., 1996; Lantz, 1994), and difficulties in finding child care and transportation to clinic sites (Couglin & Wilson, 2002; Watkins et al., 1990).

Prostate Cancer Screening

Prostate cancer is the second leading cause of death among Hispanic men (CDC, 2010) although their risk for the disease is lower than males of African descent. Hispanic men are reported to be less likely to undergo prostate cancer screening compared to other U.S. ethnic groups. For example, in 2005, only 30% of Hispanic men aged $\geq$ 50 were reported to have the

prostate-specific antigen (PSA) test compared to 43% of non-Hispanics (ACS, 2010). However, published studies on prostate cancer prevalence and screening among MSFW are scant.

It is known that agricultural workers are exposed to a wide variety of carcinogens, such as pesticides, and ultraviolet radiation from excessive sun exposure, which among other factors, may increase their risk for prostate cancer (Hansen & Donohoe, 2003). Two prior studies reported that many male Hispanic MSFW's appear to be unfamiliar with the prostate gland, prostate cancer (Lantz et al., 1994; Meade et al., 2003) and the importance of cancer screening (Meade et al., 2003). Many men were also reported to feel uncomfortable and embarrassed when about cancer and prostate cancer exams (Lantz et al., 1994).

Mental Health

Emerging evidence suggests that mental health outcomes such as depression, anxiety, and stress are common among MSFW as are certain psychologically manifested ethnospecific conditions, i.e., *susto, corajes, latidos* (Hiott et al. 2008; Kim-Goodwin & Bechtel, 2004; CIRS, 2002; Hovey & , Magaña 2002a; Hovey & Magaña 2002b; Hovey, 2001). Migrant and seasonal farmworkers are subject to multiple sources of stress. These include unstable employment (Hansen & Donohoe, 2003; Villarejo & Baron, 1999; Schenker, 1996), hazardous physical labor performed under tight time constraints (Magaña & Hovey, 2003), social isolation (Hovey, 2001), acculturative stress (Hovey & Magaña 2002a), discrimination, and reduced social mobility (Hiott, et al., 2008).

Published data on suicidal ideation or attempts among MSFW is extremely limited. The results of the CAWHS survey indicated that 2% of MSFW surveyed (n=968) admitted to having suicidal ideation sometime in the past (Villarejo, 2002). However, the actual prevalence is

probably higher since an early half of survey participants did not want to answer questions about suicide. The physical, psychological, and social stresses experienced by MSFW have been linked to lower self-esteem, feelings of hopelessness, anxiety, depression, and suicidal thoughts (Arcury & Quandt, 2007). Stress is usually an overlooked health problem.

Alcohol and Illicit Drug Use

Information on substance abuse among adult MSFW may be highly reported for the general population. Types of illicit drugs reported included crack cocaine (Aversa et al., 1999), alcohol and marijuana (Bletzer & Wetherby, 2009). Alcohol and drug use among MSFW is problematic for a number of reasons. The negative effect of chronic consumption of alcohol and other drugs on physical and psychological health is well documented. These include increased risk for cancers, cirrhosis, hypertension and other cardiovascular diseases, (Hovey, 2001), impaired memory (Hovey, 2001), and poor mental health outcomes (Grzywacz et al., 2006; Magaña & Hovey, 2003; Hovey, 2001). Alcohol and drug abuse in MSFW also has been linked with heightened risk for occupation-related injuries and accidents (Hovey, 2001), work-related and domestic violence (Rodriguez, 2002), and non-worksite car accidents and injuries (Worby & Organista, 2007; Cherpitel & Borges, 2001).

Although injection drug use has been reported as uncommon among MSFW, the prevalence could be higher. For example, close to one-tenth of MSFW women of Mexican descent working in northern California admitted to having a sexual partner who had used injection drugs (Organista, 1998). It has been suggested that MSFW frequently use alcohol and other drugs as coping mechanisms to alleviate the economic, psychological and social stress they experience in their daily lives, the boredom, social isolation (Chi & McClain, 1992) and depression and anxiety (Arcury & Quandt, 2007; Hovey, 2001). It has been reported that the

longer Mexican immigrants (Carter-Pokras et al., 2008) including MSFW (Kudula et al., 2004) live in the U.S., the more likely they are to drink and use illicit drugs. Grzywacz and colleagues (2007) linked heavy alcohol use to work stress among Latino MSFW. Their results indicated that single workers and those with more unstable employment status (i.e., non-contract workers) tended to drink more than their respective married, contract worker counterparts. Other risk factors linked to alcohol abuse among MSFW include male gender (Alderete et al., 2000), age $\geq$ 25 years, U.S. permanent residence, and education > 6 years (Alderete et al. 2000).

Tobacco Use

Prevalence of tobacco use among MSFW are scant. Lukes & Miller (2002) reported that 7% of the 119 MSFW clients they surveyed who were waiting for dental services at a migrant farmworker clinic in rural southern Illinois admitted to being smokers. However, the results of another survey, which specifically evaluated the use of tobacco among 181 mostly male MSFW in eastern North Carolina, found a much higher prevalence, i.e., 38%. In contrast, however, Schenker (1996) found the number of health problems among MSFW, such as cancer from lung and bladder, was decreased due to a lower prevalence of smoking. Overall, acculturation may be an important predictor of smoking behavior, as it has been for alcohol use.

Workplace Violence

Published information on the prevalence and predictors of workplace violence are very limited. Injuries are frequent, and the stress of the job could challenge home life causing abuse among family members, and other MSFW. This could be more dangerous if alcohol use is implicated. It is a common practice among the Latino farmworkers to drink heavily, and with that increases the risk of violence (Grzywacz et al., 2007; Kim-Godwin & Fox, 2009). According

to Villarejo (2003), a positive association was found among the nature of violence, increasing the likelihood of carrying a weapon due to emotional or behavioral problems.

A study by Kandula et al. (2004) reported that violence among immigrants was mainly focused on homicide and intimate partner violence (IPV). This study also reported that Latino women are at highest risk for physical assault or rape. Gender roles and norms, influences the domination men have over women. Therefore, better chances of IPV occurs if women have increased acculturation, as opposed to men low in acculturation and high in stress (Kim-Godwin & Fox, 2009; Caetano et al., 2007).

Study Rationale

The 1-3 million migrant and seasonal farmworkers employed in the multi-billion dollar U.S. agricultural sector play a vital role in its success and ensuring the food safety, nutrition, and health of the country. Ironically, many lack sufficient food and are at-risk for poor health and nutritional status as well as premature mortality. The excess morbidity and mortality of this predominantly Hispanic occupational group has been linked to poverty such as substandard living conditions, poor education, reduced health care access, occupational exposures, immigrant and/or undocumented status, language and cultural barriers, and other structural, social, and individual factors. Although published population prevalence data are available on reproductive and sexual health issues and screening among Hispanics in the U.S., little is known about those of migrant and seasonal farmworkers. There is no national database in the U.S. that systematically collects data on reproductive cancer, reproductive cancer screening and contraceptive and STI prevention behaviors of MSFW. Likewise, very few individual studies have reported on these nor other important MSFW health concerns such as tobacco smoking, alcohol and drug use, and workplace violence. Studies of such behaviors and the factors that

influence them are important because of their potential for modification through health education and promotion interventions.

CHAPTER II

STUDY AIMS AND HYPOTHESIS

The major objective of the pilot study was to explore selected health issues, health screening and health risk behaviors among migrant and seasonal farmworkers working in the Paso Del Norte region of far west Texas and southeastern New Mexico.

The first specific study aim was to characterize the reproductive and sexual health history and preventative behaviors, mental health and mental health treatment, substance abuse, and workplace violence. This aim was accomplished by analyzing data collected from in-depth interviews of adult MSFW regarding prevention of pregnancy and sexually transmitted infections, prenatal care, screening behaviors (i.e., cervical, breast, prostate cancer), mental health conditions and treatment, substance abuse (alcohol, illicit drugs, tobacco), and workplace violence including that associated with on the job alcohol consumption

The second specific aim was to investigate factors associated with reproductive and sexual health history and preventative behaviors, mental health and mental health treatment. This aim was carried out analyzing their association with participant sociodemographic, lifestyle, acculturation, and other predictors. It was hypothesized that age, poverty, low education, and other factors associated with low acculturation reduce health-related knowledge including the importance of cancer screening and other preventative health behaviors.

CHAPTER 3: METHODS AND MATERIALS

Study Population

It has been estimated that approximately 10,000 MSFW and their households live in far west Texas and southeastern New Mexico (Larson 2000; Eastman 1996). The majority of MSFW in this region are Mexican-born immigrants. These plant, cultivate and harvest several major crops in the upper Rio Grande River valley including chilies, white onions, pecans, cotton, and other seasonal crops. They do not live in migrant labor camps such as those found in Florida, California, N. Carolina and other parts of the U.S. Instead, the live in various locations around the region including rented houses, apartments, and trailer homes (Weigel et al., 2007). Their annual incomes are low, averaging around half the national average of 12,000 (U.S. DOL, 2005).

Study Site and Participants

The study was part of a larger cross-sectional survey that investigated the household food security, nutrition, and occupational health of MSFW working in the adjacent U.S.-Mexico border counties of El Paso County, Texas, and Dona Ana County, New Mexico. A site-based convenience sampling strategy was used to recruit prospective MSFW households. These were identified through local organizations and agencies in the two counties that serve MSFW and their families. Convenience-based sampling is a method recommended for populations that are hard to access such is the case for MSFW (Muhib et al., 2001).

To be eligible for the study, households were required to have at least one adult member who had performed paid farm work during the prior 12-months. Households who indicated their interest in participating in the study were visited by the study team in their homes, migrant centers, community centers, or another location chosen by them. Household members aged $\geq$ 18 years who had performed paid farm work during the previous 12-month period and did not have

any sensory or developmental conditions that would impede their ability to understand and answer questions were eligible to participate. A total of 141 adults living in 100 migrant and seasonal farmworker households agreed to participate and went through the written informed consent process. The protocol for the study was approved by the University of Texas at El Paso (UTEP) Institutional Review Board (protocol #1669).

Study households were compensated for their time with $20 food baskets. They also received free anthropometric, blood pressure, and blood hemoglobin, glucose and lipid profile examinations. The results of the exams and their interpretation were explained to them orally and in written form. In the case of abnormal results, they were referred to free/low cost local medical clinics and a health center that receives federal funding to provide medical services to MSFW.

Data Collection and Analysis

Data Collection Procedures and Instruments

The survey data were collected during a 10-month period in 2003. Face-to-face interviews were conducted with participants by four trained bilingual, bicultural interviewers who were native Spanish speakers. The interviews were conducted in the respondent's language of preference. All subjects asked to be interviewed in Spanish. Selected closed and open-ended questions from the California Agricultural Worker Health Survey (CAWHS) main instrument and male and female health supplements (CIRS, 2002) were used to explore the health risk and health-seeking issues of study participants. The validity and other characteristics of the CAWHS instrument have been described previously (CIRS, 2002).

Data were collected on participant and household sociodemographic characteristics (e.g., sex, age, self-reported ethnicity, education, marital status, household size and composition, permanent residence), current living conditions, migration patterns, acculturation indicators (oral

and written language proficiencies, years in U.S.), and current and past employment history. Data also were collected on reproductive history contraceptive use, STI's, prenatal care, prior pregnancy outcomes, sexual behavior practices, pregnancy prevention practices, cervical cancer, breast cancer, and prostate cancer screening knowledge, attitudes, and practices. Other questions include current or prior use of tobacco products, alcohol, illicit drugs at the workplace and elsewhere, mental health, mental health treatment history, and workplace violence experiences.

Data Analysis

The data for this pilot study were entered into the SPSS database management system (SPSS, V.17, Chicago, IL). Categorical data were described as % (*n*) or % (*nl* sample size) in cases where a subset of the study sample is used. Continuous data were described as means ± standard deviations (SD). Bivariate analysis of the differences between proportions was assessed using 2 x 2 contingency table, analyses with corrected X^2 or Fisher's exact test, as appropriate. Students' independent t-test or one-way ANOVA were used to analyze mean differences. Content analysis was employed to analyze the qualitative data from the open-ended questions.

CHAPTER 4: STUDY RESULTS

Subject Characteristics

The sociodemographic, lifestyle, migration, and other characteristics of the 141 adult MSFW study participants are displayed in Table 1. As the table indicates, close to nine-tenths were Mexican-born immigrants. They had worked in the United States for an average of nearly two decades. The majority were middle-aged with an average age of 42 $\pm$ 14.3 years. The sample was poorly educated, for the most part, with only an elementary-school education. Two-thirds were married and lived with their families in the local area. In contrast to many other U.S. MSFW groups who live in labor camps, most study participants and their households resided in various locations throughout the Paso del Norte region.

Substance Use

Tobacco

As Table 2 indicates, four-tenths of participants reported a history of cigarette smoking. Of those who had ever smoked, 61.2% (36/59) of reported that they had started as teenagers. Participants who were over the age of 50 years were more likely to report a positive history of smoking compared to those who were younger (57.1% vs. 36.1%; X^2= 6.5; *P*=0.011). One-quarter of the participants admitted to being current smokers. A significantly greater proportion of men compared to women reported being a current smoker (33.3% vs. 11.1%; X^2= 7.7; *P*=0.006). No statistically significant predictors for lifetime or current smoking were identified including foreign birthplace, years of U.S. residence, education, marital status, and the other factors measured in the study.

Alcohol

Table 2 indicates that in excess of one-half of the participants reported that they currently consumed alcoholic beverages; 13% drinking most days of the week. Table 2 also shows the average amount of alcohol reported by participants on the days that they drink. A drink was defined as one 12-ounce regular bottle of beer, an 8-ounce glass of wine, or a one 1-ounce shot of liquor. As the table shows, 46% of the 77 participants who were current drinkers admitted to drinking as many as 4-5 to more than 10 drinks on the average when they drank. Men were more likely than women to report being a current drinker (72.4% vs. 24.1%; X^2=29.4; P <0.0001). In addition, a larger proportion of men compared to women who were current drinkers also admitted to on-the-job drinking in the fields (29.9% vs. 5.9%; X^2=6.4; P=0.011). Other than gender, neither age, education, time in the U.S. nor the other participant characteristics measured in the study were associated with either current drinking or specifically on-the-job drinking. Among those workers who reported drinking on the job, they admitted to consuming an average of 2.4 $\pm$ 1.8 drinks the last time they consumed alcohol in the fields (range 1-8 drinks). As the table indicates, the major reported sources of alcoholic beverages in the workplace were the participants themselves or a fellow worker followed by lunch wagon or roving vendors as well as farm labor contractors.

Illicit Drug Use

Nearly one-sixth of the participants admitted to having used an illicit drug in the past and around 6% reported that they were currently using drugs or had done so within the past few months (Table 2). The most frequently reported illicit drugs used were marijuana and cocaine.

The bivariate analyses were unable to identify any gender, age, education, or other predictors of illicit drug use.

Workplace Violence

Seven percent of participants (n=10) reported that they had personally experienced one or more episodes of workplace physical violence, i.e., while working in the fields. They reported that the most recent workplace violence event they had experiences involved a confrontation with a fellow farmworker (50%), mayordomo/contratista/boss (40%), and or/a family member (10%). One of the major work-related concerns reported by all participants was job-site drunkenness resulting in verbal and physical confrontations in addition to placing them and others at risk for worksite injuries and accidents. Participants also said that they were concerned about the frequent verbal abuse they and other workers receive from the farm labor contractors and their assistants. They indicated that this causes them chronic stress.

Mental Health

As Table 3 indicates, slightly more than one-sixth of the study participants revealed that they had been diagnosed with a mental or psychological condition by a health professional, the majority for depression. Several also indicated that they had been diagnosed with schizophrenia. Women were more likely than men to report having been medically diagnosed with depression (24.5% vs. 8%; X^2= 6.0; *P*=0.014). However, no other participant characteristics were associated with being diagnosed with depression. As the table also shows, of these, slightly more than a third reported that they had received any type of intervention for their condition. The

interventions they received were from health professionals at local clinics or private medical offices or in one case, from a priest.

Two percent of participants reported having suicidal thoughts on at least one occasion during the previous 12-month period. One also admitted to current suicidal thoughts. Two participants reported that they had been experiencing suicidal thoughts for less than a month and other said that these had been occurring over the past 1-2 months. Two of the three participants said that they had received treatment but the other had not. The only participant characteristic found to be associated with suicidal ideation during the past 12-month period was education. Specifically, subjects who had at least some high school or college/technical education were more likely to report recent suicidal ideation compared to those with less education (6.8% vs. 0%; Fisher's exact test= 0.03).

Reproductive and Sexual Health

Sexually Transmitted Infections

Table 4 indicates that approximately six percent of the participants reported having been medically diagnosed in the past with at least one sexually transmitted infection (STI). It also shows that three-quarters of sexually active participants reported that they and their partner(s) were not currently using any form of protection against STI's. One of the most frequent reasons that they gave to explain their non-use of STI protection was they are married or in an otherwise monogamous relationship. The other was that they, their partner, or both don't like them or want to use them. Most of the one-quarter of participants who reported using STI protection said that the male condom was the method they used. However, two women also indicated that they used contraceptive pills for STI protection. Non-married participants were more likely than those who

were married to report using STI protection (48.0% vs. 18.2%; X^2=8.4; *P*=0.004). Likewise, participants who had recently immigrated (within past 5 years) were more likely than those who had lived in the U.S. for a longer period of time to report that they use STI protection (46.7% vs. 20.8%; Fisher's exact test *P*=0.048).

Prenatal Health Care

Most of the female study participants were multiparas averaging 4.5 $\pm$ 3.6 prior pregnancies (range 0-16 prior pregnancies). Most of their prior deliveries took place in a hospital attended by health care personnel (x= 3.6 $\pm$ 1.7 births). Relatively few reported that they had experienced a home delivery (0.7 $\pm$ 2.0 births). Twenty-five percent of women participants who had been pregnant (10/40) reported that they had received no prenatal health care during their last pregnancy.

Pregnancy Prevention

Table 4 indicates that the proportion of sexually active study participants who reported using a pregnancy prevention method was roughly equal to those who did not. As the table also shows, the three contraceptive methods they relied upon most frequently were the male condom, female sterilization, and oral contraceptives. Male sterilization was relatively infrequent as were IUD's and female barrier methods.

The reasons given by sexually active subjects to explain why they did not use any form of contraceptives was that they don't like them or did not want to use them because of side effects, they are careless and forget to use them, cost, and the belief that it is the responsibility of the

other partner (Table 4). Several also mentioned that they weren't currently using them because they were breastfeeding or the desire to become pregnant.

Cervical Cancer Screening

Table 4 indicates that 87% of the 54 women participants reported that they had been screened for cervical cancer with a pap test at least once during their lifetimes, most of these within the past two years. The reasons given by the women who said that they had never been screened were that the exam was not needed because they don't have sexual relations, they didn't like the exam, or the expense involved.

Breast Cancer Screening

Close to two-thirds of the women participating in the study reported that they had been screened by a health professional at least once during their lifetime for breast cancer. Eighty percent of these had been screened within the past 24 months. The most frequent reasons given by women who said that they had never been screened were that they didn't like or want the exam, its' high cost, or they didn't think that it was necessary (Table 4).

Prostate Cancer Screening

Less than one-fifth of male study participants reported that they had been screened for prostate cancer at least during their lifetimes (Table 4). Men over 30 years of age were more likely to have had at least one prior prostate cancer screening exam compared to their younger counterparts (35.7% vs. 11%; Fisher's exact test P=0.032). None of the other participant characteristics examined in the study predicted whether or not they had undergone a previous

prostate cancer screening examination. Table 4 displays the reasons given by male participants to explain why they had never had a prostate cancer screening exam. The single most frequent reason men gave was that they did not need the test because they were too young. The other explanations given were that they didn't have the time or money needed to get tested, they didn't know very much about the exam itself or they did not want the exam.

CHAPTER 5: DISCUSSION

The present pilot study was conducted to explore the health screening and risk behaviors of 141 migrant and seasonal farmworkers (MSFW) who live and work in the Paso Del Norte region of far west Texas and southeastern New Mexico. Like most MSFW in the United States, the large majority of study participants were poorly educated Mexican-born immigrants. However, different from what has been reported for many Mexican born MSFW, they tend to be middle-aged to elderly, and they did not live in migrant labor camps, but rather were scattered throughout the region. Many appeared to be seasonal (i.e., settled) rather than migratory laborers, since they remained in the Paso del Norte region during the agricultural off-season where they were either unemployed or worked in construction, landscaping and other odd jobs.

One of the major findings from this study was the relatively high use of tobacco, alcohol, and illicit drugs as an apparent method to self-medicate for depression which also appeared commonplace in this farmworker group. Farmworkers are documented to be at high risk for psychological as well as physical stress and poor mental health outcomes.

Cigarette and marijuana smoking are both associated with a high risk for lung/throat, mouth, esophagus, and other types of cancer. The frequent consumption of alcoholic beverages such as beer and hard liquor is associated with an increased risk for cirrhosis, hypertension, several types of cancer (Hovey, 2001), and poorer mental health outcomes (Grzywacz et al., 2006; Magaña & Hovey, 2003; Hovey, 2001). It also can increase the risk for dehydration in the desert environment, in which MSFW live and work. Furthermore, the already high risk of MSFW for work-related injuries, accidents, and deaths (Hansen & Donohoe, 2003; Arcury & Quandt, 2007, Villarejo, 2003) could be increased among individuals who drink while handling large unbalanced loads, tools, and farm machinery. Moreover, as Rodriguez (2002) has reported,

alcohol and illicit drug use among MSFW is associated with jobsite and domestic violence. The current study results confirmed that close to one-tenth of the MSFW in our study had personally experienced one or more episodes of workplace violence. They linked many of these episodes to drunkenness on the job.

Other major findings from this study involved the screening behavior for reproductive cancers. The reported lifetime frequency of prostate cancer screening was very low, especially for the number of aging farmworkers surveyed. This is important because prostate cancer is the second leading cause of death among Hispanic men (CDC, 2010). Many of the reasons given by men who had never been screened were similar to what has been previously reported for Hispanic men and male farmworkers, in particular. For example, Lantz and associates (1994) reported that a barrier to cancer detection included lack of knowledge and education regarding cancer. They also reported feeling uncomfortable and/or embarrassed about any medical examination. The reported lack of information on the exam (18.5%) and statements to the effect that they were too young to undergo it highlight the fact that education about the importance of prostate cancer is needed for this important occupational group.

Different from the situation with prostate cancer screening, the reported prevalence of cervical and breast screening was relatively high. It was found that 87% of the 54 women that participated had been screened for cervical cancer with a Pap smear test, and that 67% had been screened for breast cancer. Schleicher (2007) and Swan and associates (2003) have reported similar findings for other foreign-born Hispanic females. However, it is much high than that reported for female MSFW with respect to mammographic exams.

The study findings indicated that 75% of the participants do not use protection against STI's. A number of them stated that the reason that they don't use them is because they are

married or otherwise in a monogamous relationship. This assumption on the part of the study participants is problematic since even though they may be monogamous, their partner may not be unbeknownst to them. Women, in particular, may be at high risk if their partners have sexual relations with sex workers or other partners who also may not use protection. One of the most common reasons they gave for their infrequent use of condoms was the fact that they did not like them. Organista and associates (1998) reported that many men don't like condoms because they claim that it lessens sensitivity. They also reported that there is considerable lack of basic knowledge about condom use among men and their partners (ibid).

The potential limitations of this study should be taken into consideration when interpreting its findings. The sample size of 141 was relatively small. The convenience sampling procedure used to access the adult study participants might not be representative of the MSFW in the Paso del Norte. However, this concern would seem to be minimal because of the close level of agreement found with other published studies conducted in the same geographic region with respect to MSFW age, ethnic, education, migration, work experience, health, nutritional, and other participant characteristics (Poss & Pierce, 2003; Poss et al., 2005). Another possible limitation is that the reported burden of health conditions and behaviors could have been underestimated due to survivor or healthy worker bias, since MSFW with illnesses or other conditions that did not allow them to work could have been underrepresented in the study. Self-reports also are subject to recall and other forms of bias. However, the use of a standardized, validated interview instrument that were administered in the participant's native language by trained bilingual, and bicultural interviewers increases confidence that measurement, interpretative and other forms of bias was minimized.

In conclusion, the study findings highlight the multiple health and health-seeking challenges faced by the U.S.-Mexico border migrant and seasonal farmworkers (MSFW). The high rate of alcohol consumption shows concern for worksite accidents and workplace violence among MSFW due to high occupational stress.

Recommendations

Based on the findings from this study, it is recommended that health education and promotion interventions be carried out among both adult and adolescent farmworkers regarding the use of tobacco, alcohol, and illicit drugs. Another recommendation is that future investigations should be conducted into the reasons why MSFW believe that the use of oral contraceptives is a method of STI prevention. Oral contraceptive use may be misinterpreted for pregnancy prevention vs. sexually transmitted infection prevention among this population. Therefore, health education on STI and pregnancy prevention is suggested. Health education is also needed to help persons to better understand that just because one partner in a marital or other relationship is monogamous, this does not preclude them from contacting a STI because the other partner may not be monogamous. Interventions are also need to educate women about the importance of prenatal care, even more experienced mothers, and how to access it. Another recommendation to is to conduct in-depth interviews of focus groups to better understand the factors that contributed to the relatively high rate of cervical and breast cancer screening among a group that has documented poor access to health care. The final recommendation is to carry out a qualitative research study with key informants, focus groups, and/or in-depth interviews among males and their partners to understand the reasons why male MSFW, including older ones, don't get screened for prostate cancer screening. This information could be used to

formulate health education and promotion interventions that could improve prostate cancer screening rates.

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Table 1. Participant Characteristics (n=141)

Participant Characteristics	**No. (%)** **Mean ± S.D**
Gender (male)	87 (61.7)
Age (in years)	42.5 ± 14.3
18-29 years	28 (19.9)
30-39 years	34 (24.1)
40-49 years	35 (24.8)
50-59 years	25 (17.7)
60-69 years	16 (11.3)
>70 years	3 (2.4)
Formal education (in years)	6.2 ± 3.1
No formal schooling	4 (2.8)
Grade K-3	9 (6.4)
Grade 4-6	83 (58.9)
Grade 7-9	26 (18.4)
Grade 10-12	13 (9.2)
Some technical school or college	6 (4.3)
Marital status	
Married	92 (65.2)
Single	28 (19.9)
Separated/divorced	14 (10.0)
Widowed	7 (5.0)
Average household size (no. of members)	4.4 ± 2.4
Birthplace	
United States	18 (12.8)
Mexico	123 (87.2)
Chihuahua state	44 (31.2)
Coahuila state	22 (15.3)
Durango state	20 (14.2)
Zacatecas state	12 (8.3)
Guanajuato state	9 (6.4)
Mexico DF	5 (3.5)
Other central Mexico states	11 (7.8)

Table 1. Participant Characteristics (continued)

Participant Characteristics	**No. (%)** **Mean ± S.D**
Length of U.S. residence ≤ 5 years	17 (12.1)
Current Household Permanent Residence	
El Paso County, Texas	87 (61.7)
Dona Ana County, New Mexico	8 (5.7)
Other U.S. state	6 (4.3)
Cd. Juarez, Mexico	13 (9.2)
Other town in northern Mexico border state	23 (16.3)
None	4 (2.8)
No. of years farm work in U.S. (range: 8.4 months-58 yrs)	18.8 ± 11.7

Table 2. Reported Substance Use by Participants (n=141)

Substance Use	**No. (%)**
Tobacco	
Any cigarette smoking (lifetime) (% yes)	59 (42.0)
Current cigarette smoker (% yes)	35 (24.8)
Average age at initiation of cigarette smoking	16.8 ± 4.7
Average no. of cigarettes smoked/day (n=57)	
< ½ pack cigarettes /day	38 (66.7)
½-1 pack cigarettes/day	16 (28.0)
> 1 pack cigarettes/day	3 (5.3)
Alcoholic Beverages	
Current alcoholic beverage consumption (% yes)	77 (53.9)
Frequency of alcohol consumption (n=140)	
None	64 (45.7)
Occasional, less than once a week	25 (17.9)
Once a week	15 (10.7)
2-3 days/week	18 (12.9)
4-5 days/week	5 (3.6)
6-7 days/week	13 (9.3)
Average alcohol consumption among current drinkers* (n=77)	
1 drink/day	13 (16.9)
2-3 drinks/day	29 (37.7)
4-5 drinks	8 (10.4)
6-9 drinks	12 (15.6)
≥ 10 drinks/day	15 (19.5)
Workplace (farmwork) alcohol use (n=101)	86 (85.1)
Source of workplace alcohol (n=25 responses)	
Farm worker or fellow workers	11 (44.0)
Employer/contractor	4 (16.0)
Lunch wagon/store sells in field	10 (40.0)
Amount of last alcohol consumed at workplace	2.4 ± 1.8
(range: 1-8 drinks)	

Table 2. Reported Substance Use (continued)

Substance Use	**No. (%)**
Illicit Drugs	
Use of illicit drugs (lifetime use) (% yes)	19 (13.5)
Frequency of drug use (n=19)	
Within last week	4 (21.1)
Last month	1 (5.2)
Few months ago	3 (15.8)
Few years ago	3 (15.8)
Many years ago	8 (42.1)
Drugs used (n=24 responses)	
Marijuana	13 (54.2)
Cocaine	8 (33.3)
Other (glue, mushrooms, prescription drugs)	3 (12.5)

* A drink was defined as one regular 12-ounce bottle of beer, one 8-oz glass of wine, or one 1-ounce shot of liquor.

Table 3. Mental Health Conditions and Treatment History

Reported Mental Health Condition/Treatment	**No. (%)**
Received prior medical diagnosis for a mental health condition (% yes)	23 (16.4)
Mental health condition medically diagnosed (n=23 responses)	
Depression	20 (87.0)
Schizophrenia, bipolar disorder	3 (13.0)
Received treatment for mental health problem (n=23 responses) (% yes)	9 (39.1)
Mental health treatment site (n=9 responses)	
Local clinic	4 (44.4)
Private medical physician	4 (44.4)
Roman Catholic priest	1 (11.1)
Suicide Ideation/Attempts	
One or more attempted suicide during previous 12 months (% yes)	3 (2.1)
Presently have suicidal thoughts (n=3) (% yes)	1 (33.3)
Length of time have had suicidal thoughts (n=3) (% yes)	
< 1 month	2 (33.3)
1-2 months	1 (66.7)
Received any treatment for suicidal ideation/attempts (n=3) (% yes)	2 (66.7)

Table 4. Sexually Transmitted Infections (STI's) and Pregnancy Prevention (n=141)

Reported STI and Pregnancy Prevention	**No. (%)**
Positive History for Medically Diagnosed STI	8 (5.7)
Current STI Protection	
Subject and/or partner uses protection against STI's	33 (23.4)
Participants and/or partners never use any STI protection	102 (72.3)
No sex/widowed	6 (4.3)
Type of STI protection used (n=33 responses)	
Male condoms	31 (93.9)
Pills	2 (6.1)
Reasons given for not using STI protection (n=79 responses)	
Don't like/never used/partner doesn't like	24 (30.4)
Monogamous/married	49 (62.0)
Too expensive	2 (2.5)
Pregnancy desired	1 (1.3)
Always forget	2 (2.5)
Other	1 (1.3)
Pregnancy prevention methods	
Yes	61 (43.3)
No	70 (49.6)
Not applicable as don't have sexual relations	10 (7.1)
Contraceptive methods used (n=73 responses)	
Male condom	23 (31.5)
Female sterilization	21 (28.8)
Male sterilization	3 (4.1)
Oral contraceptives	16 (21.9)
Rhythm method/abstinence	3 (4.1)
Intrauterine device	3 (4.1)
Diaphragm/cervical sponge	2 (2.7)
Spermidal cream/foam	1 (1.4)
Other	1 (1.4)

Table 4. Prevention of Sexually Transmitted Infections (STI's) and Pregnancy (continued)

Reported STI and Pregnancy Prevention	**No. (%)**
Explanation for non-contraceptive use (n=46 responses)	
Doesn't want or like/side effects	9 (19.6)
Infertile (menopause, sterilization)	19 (41.3)
Forgot/careless	5 (20.9)
No partner/sex	6 (13.0)
Expense	2 (4.3)
It is the other partners responsibility or both	2 (4.3)
Other reasons	3 (6.5)

Table 5. Reproductive Cancer Screening Practices (n=141)

Reproductive Cancer Screening	**No (%)**
Cervical Cancer Screening	
Lifetime cervical cancer screening (n=54)	47 (87.0%)
Time since last exam (range 1-72 months) (n=47)	
≤ 12 mos.	25 (53.2)
13-24 mos.	14 (29.8)
25-36 mos.	4 (8.5)
≥ 37 mos.	4 (8.5)
Reasons reported lack of cervical cancer screening (n=6 responses)	
Cost	2 (28.6)
Unnecessary exam (since not having sex or other reason)	2 (28.6)
Don't want to have exam	1 (14.3)
Haven't decided to have it yet	1 (14.3)
Breast Cancer Screening	
Lifetime screening for breast cancer (n=54)	33 (61.1)
Time since last exam (range 1-72 months)	19.9 ± 17
≤ 12 mos.	19 (57.6)
13-24 mos.	7 (21.2)
25-36 mos.	3 (15.8)
≥ 37 mos.	4 (21.0)
Reasons given for not being screened for breast cancer (n=24)	
Don't like or want the exam	9 (37.5)
High cost	5 (20.8)
Exam is unnecessary	4 (16.7)
Have never thought about getting the exam	3 (12.5)
Not the right age for the exam	1 (4.2)
Medical personnel didn't tell that needed it	2 (8.3)

Table 5. Reproductive Cancer Screening Practices (continued)

Reproductive Cancer Screening	**No (%)**
Prostate Cancer Screening	
Lifetime prostate cancer screening (n=87)	13 (14.9)
Time since last prostate exam (range 1-42 months) (n=18 responses)	
≤ 12 mos.	8 (44.4)
13-24 mos.	6 (33.3)
25-36 mos.	3 (16.7)
≥ 37 mos.	1 (5.6)
Reasons given for not being screened for prostate cancer (n=54 responses)	
Not needed/not applicable because of young age	22 (40.7)
Lack access (time, money, clinic, MD)	12 (22.2)
Lack information on the exam	10 (18.5)
Don't want to have it	6 (11.1)
Other miscellaneous reasons	4 (7.4)

CURRICULUM VITAE

Claudia D. Saenz was born in El Paso, Texas, the only daughter of Salvador O. and Gloria A. Saenz, and younger sister to Adrian S. Saenz. She graduated from the University of Texas at El Paso in the spring of 2007 obtaining a degree of Bachelor's of Science in Kinesiology with a double minor in Biology and Health Promotion. Immediately after, she started pursing her Master's degree in Public Health at the University of Texas at El Paso. While pursuing a master's degree, she interned with a prevention program called The Teen Advisory Board (T.A.B.) associated with the Women's Health Center at the University Medical Center for her Practicum during the summer and fall of 2008. Under the supervision of Carmen Diaz De Leon (Director) and Sally Andrade (Data Analyst) she completed an evaluation project using a knowledge gain pre and post-test administered to 7^{th} and 8^{th} graders. Claudia graduated with a Master of Public Health degree from the University of Texas at El Paso in May 2010 and plans to move to Arizona to further her education and work experience. Her interests include chronic diseases and Hispanic health disparities along the U.S.-Mexico Border.