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Cross-Border Mobility, Access To Healthcare Through Health Coverage, And Other Correlates For Utilization Of Healthcare Services Along The U.S.-Mexico Border

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CROSS-BORDER MOBILITY, ACCESS TO HEALTHCARE THROUGH HEALTH COVERAGE, AND OTHER CORRELATES FOR UTILIZATION OF HEALTHCARE SERVICES ALONG THE U.S.-MEXICO BORDER

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ABSTRACT

BACKGROUND: At the national level, Hispanics suffer from poor health coverage. This is amplified in Texas, which has the highest percent (26.3%) of uninsured individuals in the U.S., and further augmented in El Paso, TX. In some border states and counties, barriers to healthcare include medically underserved areas, low-income, and the recent immigration among the Hispanic population. Cross-border mobility has facilitated access to health services in Mexico. Despite this, there remain gaps in understanding utilization of healthcare services among Hispanics in El Paso, TX. **AIMS & OBJECTIVES:** The aims of this study are to: (1) describe access to healthcare through health coverage, utilization of healthcare services and other factors and to (2) assess the association between utilization and (a) access to healthcare through health coverage; (b) cross-border mobility; and (c) other socio-demographic characteristics among Hispanics living in El Paso, Texas. **METHODS:** This study is a secondary data analysis from a cross-sectional study conducted in the El Paso border region between 2011 and 2012 among 1152 self-identified Hispanics adults and marginally housed individuals in El Paso, TX. Measures included for this analysis were socio-demographic characteristics, access to healthcare through health coverage, utilization of healthcare services, and cross-border mobility. The outcomes in this study were health insurance, *time since last medical check-up*, *country where medical treatment was sought*, and *medical care accessed in Mexico in the past three years*. Descriptive statistics were provided and appropriate bivariate analyses were performed using Pearson Chi-Square for categorical variables and Mann Whitney-U test for continuous variables using SPSS Statistics v21.0. Significance was determined by $p<0.05$. **RESULTS:** Participant's median age was 30 years of age; 18.5% spoke only Spanish, 42.9% unemployed, 5.7%

undocumented, and close to half of the participants were uninsured (55.4%), low income (59.4%), and had less than high school education (46.1%). *Health insurance* was statistically significantly associated with almost all measures. *Time since last medical check-up* was associated with most socio-demographic characteristics, health insurance, not having accessed health care services or pharmaceuticals due to cost and specifically in the United States. *Country where medical treatment was sought* was significantly associated to most socio-demographic measures except gender, income, and employment. Treatment sought in Mexico was associated with not having insurance, having needed health care services but unable to receive due to financial problems, having purchased pharmaceuticals in Mexico, and high frequency of visits to Ciudad Juárez. While treatment sought in the U.S. was associated with having insurance, having accessed inpatient services in the past 6 months, and trust/familiarity with U.S. physician/medications. *Medical care accessed in Mexico in the past three years* was only associated to gender, purchasing pharmaceuticals in Mexico, and having ever gone to Ciudad Juárez. **CONCLUSIONS:** Hispanic El Pasoans are marginalized for health coverage and utilization of health care services in the U.S. based on income, education level, citizenship status, migration generation, and language. Although the Patient Protection & Affordable Care Act seeks to improve health equity for U.S. citizens through health insurance coverage at a lower cost, this will have implications for those individuals that are non-U.S. citizens and for those that still find the health coverage inaccessible due to cost or lack of familiarity with the U.S. healthcare system. **RECOMMENDATIONS:** At this time Texas will not be creating a state-based health insurance marketplace but the findings from this study suggest that this would be beneficial for Hispanics in El Paso, Texas.

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INTRODUCTION

At the national level, Hispanics are at a disadvantage for access to healthcare through poor health coverage. A number of factors that place Hispanics at a higher risk for poor access to healthcare become amplified in the state of Texas, and further augmented in the city of El Paso, Texas. The U.S.-Mexico Border Health Commission has identified improving access to health services as a priority for communities along both sides of the U.S.-Mexico Border, aligned with the national objectives set by Healthy People 2020 (U.S.-Mexico Border Health Commission, 2011). This study will describe health coverage among Hispanics at the national, state, and county level for El Paso, Texas. The barriers discussed for Hispanics to access healthcare will include, medically underserved areas (MUA's), low-income, and the migrant status of some individuals. These barriers will provide a contextual understanding under which healthcare services are utilized by Hispanics along the U.S-Mexico border and how cross-border mobility may facilitate access to health services in Mexico for some Hispanics**.**

BACKGROUND & SIGNIFICANCE

The city of El Paso, Texas is located along the U.S.-Mexico border, adjacent to Ciudad Juárez, in the state of Chihuahua in Mexico, and forms part of the U.S.-Mexico Border Region that extends 62.5 miles north and south of this international border (USMBHC, 2012). The population of the city of El Paso, Texas is primarily composed of Hispanics (82.2%) of which, a third (30.1%) are less than 18 years of age and a tenth (10.3%) account for individuals over the age of 65 (U.S. Census Bureau, 2010). One-fourth (25.6%) of the overall population in El Paso, Texas falls below poverty level, a higher percent than that of the whole state of Texas (U.S. CB, 2010). Among foreign-born persons living in El Paso, Texas (26.6%), 95% originate from Mexico, based on the population data from 2005-2009 (Texas Department of State Health Services, 2011). The proximity between El Paso, Texas and Ciudad Juárez, Chihuahua, facilitate border crossings between these two cities with a total of 31,483,764 crossings in 2012, accounting for pedestrians, personal vehicles and passengers, and buses (U.S. Department of Transportation, 2012). The characteristics of this border city will give shape to the observed barriers for Hispanics to healthcare in El Paso, Texas.

ACCESS TO HEALTHCARE THROUGH HEALTH COVERAGE AMONG HISPANICS

United States

In 2010, the estimated percent of uninsured Americans in the U.S. was 16.3%, based on data collected through the American Community Survey (DeNavas-Walt, Proctor, & Smith, 2011). These findings indicate that Hispanics have the higher uninsured rate (30.7%) and number of uninsured (15.3 million) compared to non-Hispanic Whites, Blacks,

and Asians (DeNavas-Walt, Proctor, & Smith, 2011). In 2011, through the Current Population Survey Annual Social and Economic Supplement (CPS ASEC), Hispanics (30.1%) had the highest percent of uninsured in the United States, followed by Blacks (19.5%), Asians (16.8%) and non-Hispanic Whites (11.1%) (DeNavas-Walt, Proctor, & Smith, 2012). Over the years it has been noted that health coverage for Hispanics in the U.S. has consistently been lower than for non-Hispanics (Angel & Angel, 1996). Through a longitudinal analysis from the Survey of Income and Program Participation collected between 1983 and 2003, Hispanics at the start of the study had a higher proportion of uninsured (27.5%) compared to non-Hispanic Whites (14.6%) (Rutledge & McLaughlin, 2008). By 2003, the proportion of Hispanics that were uninsured (40.3%), were almost three times that of the non-Hispanic Whites (13.6%) (Rutledge & McLaughlin, 2008).

In 2011, through the National Health Interview Survey (NHIS), Hispanics were the most likely to be uninsured at the time the survey was completed, to be without insurance within the last year, and to have been without insurance for more than a year when compared to non-Hispanic whites, non-Hispanic blacks, and non-Hispanic Asians (CDC, 2012; Cohen & Martinez, 2012). Similarly, through the nationally representative longitudinal Health and Retirement Survey from 1992 to 1993, which followed individuals born between 1931 and 1941, Hispanics were the least likely to report having health insurance, and specifically the least likely to have private insurance reflective of the types of occupations held by Hispanics that mostly do not offer health insurance (Angel & Angel, 1996). For individuals under the age of 65 who participated in the 2011 National Health Interview Survey (NHIS), for the overall U.S. population, only 23% were covered by public plans while 61.2% were covered by private health insurance plans at the time of the

interview, contrary to the findings for Hispanics in the U.S. (Cohen & Martinez, 2012). The quarterly findings for the NHIS from 2008-2011 for persons aged 19-25, demonstrate that Hispanics consistently had a lower percent of private health insurance coverage, than non-Hispanic whites, and non-Hispanic Blacks (Cohen & Martinez, 2012).

In a two year prospective study between 2000 to 2007 of the Medical Expenditures Panel Survey among a nationally representative sample being Hispanic was associated with coverage loss for both private and public insurance (Jerant, Fiscella, & Franks, 2012). Between 2000 and 2010, 56% of the overall population growth in the U.S. was among Hispanics alone (Passel, 2011), signaling that poor coverage among Hispanics in U.S. might present challenges in the future. Findings from a twenty year cross-sectional study from 1983-2003, Survey of Income and Program Participation (SIPP), demonstrated that the although growth rate was a contributor to poor health coverage among Hispanics in the U.S., low health coverage persisted even when growth rate was statistically controlled for (Rutledge & McLaughlin, 2008). Nearly two decades ago, poor health coverage was identified as a major barrier affecting health for Latinos and current research findings indicate that this challenge persists today (Angel & Angel, 1996; CDC, 2012; CDC, 2004; Rutledge, 2008; Valdez, et al. 1993).

Texas

Through the Small Area Health Insurance Estimates (SAHIE), based on models created from several national data sets, among individuals under 65 years of age, the state of Texas had the highest percent of uninsured (26.3%)(U.S. Census Bureau SAHIE, 2012). In the state of Texas, one in four persons under the age of 65, lacked health coverage at the time of the National Health Interview Survey, 2011(Cohen & Martinez, 2012).

Based on the 2010 Census Data, 37.6% of the population in Texas self-identified as Hispanic, and this group accounted for a 41.8% of the population growth observed in Texas, since the year 2000 (Texas State Data Center, 2010). Among Hispanics residing along the U.S.-Mexico border in the state of Texas, 60% under the age of 65 were uninsured, through the Border Epidemiological Study of Aging that was completed in two waves between 2001 and 2006 (Bastida, Brown, & Pagan, 2008). Hospitalizations in Texas for 2007, revealed that Medicare accounted for a third of hospital stays (33.3%), followed by private insurance (32.2%), Medicaid (21.1%), and uninsured (9.9%). Of the hospital stays among uninsured, Hispanics accounted for 42.5% of all stays, followed by non-Hispanic Whites (36.5%) (Texas Department of State Health Services, 2009).

El Paso, Texas

Over a third (32.8%) of the general population in El Paso are uninsured among individuals under the age of 65 years, which is a higher percent of uninsured than that which is seen in the overall population for Texas and in the United States (U.S. Census Bureau SAHIE, 2012). Through the national Behavioral Risk Factor Surveillance (BRFSS) System collected in 2010, for El Paso, Texas 62.5% of the participants indicated having some kind of health care coverage, while 37.5% were uninsured, although findings by ethnic/race groups were not reported (BRFSS, 2013). In the 2005 Behavioral Risk Factor Surveillance (BRFS) System, Hispanics in El Paso, Texas were three times as likely to be uninsured than non-Hispanics (Law & VanDerslice, 2011).Recognizing that over eighty percent of the population in El Paso, Texas is composed of Hispanics with limited statistics to describe health coverage, further studies are needed to understand the variability within

this population as it relates to access to healthcare through health coverage, and in the context of the U.S.-Mexico border (U.S. CB, 2010).

BARRIERS TO HEALTHCARE

At the national level, Healthy People 2020 identifies the need to improve access to health care services as a priority for improving health equity and overall health for all Americans (DHHS, 2012). Health management is often discussed at the individual level with a focus on modifying health behaviors, while some of the these interventions may render effective, this often obscures the social constructs that place certain groups at higher risk for disease (Adler 2007; Williams & Sternthal 2010). Some barriers to improving access to health services include the lack of availability of services, the high cost of health care, and the lack of health insurance coverage (DHHS, 2012). Based on these findings, the following will be discussed as barriers to healthcare to include, medically underserved areas, low-income, and the migrant status of some populations found in border cities along the U.S.-Mexico border, such as in El Paso, Texas.

Medically Underserved Areas

The state of Texas has 355 health professional shortage areas (HPSA) with an estimated underserved population of 1,495,600, coming in second highest behind California for HPSA's in the U.S. (HRSA U.S. DHHS, 2013). According to the minorities report in rural America, 75.5% of all non-metropolitan Hispanics reside in health professional shortage counties, in comparison to non-Hispanic Whites (Department of Health Administration, 2002).The city of El Paso, Texas is classified as a medically underserved area (MUA), with a partial designation for specific census areas in 2010, based on the

number of primary care physicians per 1,000 population, infant mortality rate, percent of the population with incomes below the poverty level, and the percent of the population age 65 and over (TDSHS-MUA/MUP, 2012). According to the index of medical underservice (IMU), 62.0 or less qualifies an area as a MUA. For the five service areas identified in El Paso, Texas, the IMU scores range between 51.34 and 54.80, qualifying El Paso as a partial MUA (HRSA, 2012). Notably, in El Paso, Texas has the only trauma level I & II facilities within the 9,400 square mile trauma service area that include Hudspeth and Culberson County, with next nearest trauma level I facility in Lubbock, Texas (Office of EMS/Trauma, 2013). This indicates that not only is El Paso, Texas a MUA but it is also responsible for providing trauma health services to the large surrounding areas that are also designated as MUA (TDSHS-MUA/MUP, 2012).

Low-Income

Several studies have found associations between income and health (Angel & Angel, 1996; Lopez 2004; Vega, Rodriguez, & Gruskin, 2009; Sutherland, Fisher, & Skinner 2009; Rutledge & McLaughlin, 2008). A nationally representative sample of the Medicare Current Beneficiary Survey from 2004 to 2005, individuals of low-income who self-reported having a poor health status had an increasing percentage of mortality and higher health expenditures (Sutherland, Fisher, & Skinner 2009). Similarly, in the national Behavioral Risk Factor Surveillance (BRFS) survey collected in 2000, found that individuals of low-income had an increased likelihood in reporting poor health (Centers for Disease Control and Prevention, 2004). In the 2000 Behavioral Risk Factor Surveillance System, metropolitan areas with higher inequalities in income distribution had an increased likelihood in individuals rating themselves as having poor health (Lopez 2004). Both low-

income and low education have been linked to losing private insurance while high income and high education have been associated to gaining private insurance (Jerant, Fiscella, & Franks, 2012; Brown, Pagan, & Bastida, 2009).

The socio-economic characteristics of a population become relevant to health given the cost of care that may render services inaccessible to many. While the poverty level for the overall U.S. population is 15.9%, based on the 2011 Poverty and Median Income Estimates, this is estimated at 18.5% for the state of Texas and higher still for El Paso County estimated at 24.6% (United States Census Bureau, 2011). According to the minorities report on rural America, 73% of non-metropolitan poor Hispanics reside in five states, four of which are all border states with Mexico including Texas, New Mexico, California, and Arizona (Department of Health Administration, 2002). Reflective of these findings, through the Cross-Border Utilization of Health Care Survey in 2008, for 32 counties in Texas along the border, approximately 50% of the households had an annual income of less than $20,000 and 47% reported being uninsured, indicating that border counties are further marginalized (Su, Richardson, Wen, & Pagan, 2011).

In El Paso, the median household income was $36,333 between the years 2006 and 2010 with 25.6% of the population reporting an income below the federal poverty level (U.S. CB, 2010). In a cross-sectional study among El Paso Texas residents, Hispanics of lower socioeconomic status were more likely than Hispanics of higher income to cross the U.S.-Mexico border for health services and goods (Lapeyrouse et al., 2011). It would seem then that income provides some contextual insight on access to health and utilization of health services along the U.S.-Mexico border.

Migrants

The most marginalized population for health coverage in the U.S. are non-citizen Hispanics of Mexican decent, according to the findings from the nationally representative survey of Income and Program Participation collected by the Census Bureau (Rutledge & McLaughlin, 2008). In the findings for the 2003 California Health Interview Survey, with a sample of 42,044 participants, undocumented immigrants constituted the largest group of uninsured individuals (Ortega, 2007). Unlike common speculation, undocumented migrants were the least likely to report having utilized services through an emergency department while at the same time being the least likely to report having a usual source of health care (Ortega, 2007). Similarly, through the California Health Interview Survey in 2001, among self-identified Mexican immigrants (n = 5,310) and U.S.-born Mexican Americans (n = 3,171), lacking citizenship was associated with limited utilization of medical services in both the U.S. and in Mexico (Wallace, 2009).

UTILIZATION OF HEALTHCARE SERVICES AMONG HISPANICS ALONG U.S.-MEXICO BORDER

Through the 2008 Cross-Border Utilization Health Care survey, collected in border communities in Texas, individuals without health insurance were more likely to report using health services in Mexico versus those with health insurance (Su, Richardson, Wen, Pagan, 2011). Similarly, in the cross-sectional study, which utilized data collected from 2001-2002 and 2005-2006, through the Border Epidemiological Study of Aging (BESA) among Mexican-Americans in border communities in Texas, being uninsured was significantly associated with the utilization of health services in Mexico (Bastida, Brown, & Pagan, 2008). A significant finding in the BESA study, among Mexican-Americans along the border communities in Texas, having a regular doctor in Mexico was negatively associated

with having public or private health insurance in the U.S. (Brown, Pagan, & Bastida, 2009). Poor health coverage seems to be a recurrent characteristic observed among Hispanics that access health services in Mexico, but the findings from the BESA study also suggested that for participants from the lowest income bracket, health services in Mexico remained financially inaccessible (Brown, Pagan, & Bastida, 2009).

Certainly, studies have demonstrated that there are other factors that contribute to health services sought in Mexico by Hispanics. In California, through the 2001 Health Interview Survey collected among Mexican immigrants, U.S.-born and Mexican-American participants, the geographic proximity to the border was identified as a significant variable associated with utilization of health services in Mexico, in addition to being uninsured (Wallace, 2009). In a qualitative study in southern California with a sample of twenty-four participants consisting of Mexican-Americans and Mexican immigrants, a preference for the medical style of providers in Mexico defined by the perceived rapidity of services, personal attention, effective medications and clinical discretion as opposed to the medical style of providers in the United States, characterized as impersonal with frequent referrals and tests and uniform treatment protocols, were identified as a consistent deciding factor for seeking health services in Mexico (Horton & Cole, 2011). Through the 2001 California Health Interview Survey, although proximity to the border was a significant finding for Mexican immigrants utilizing medical services in Mexico, not having a usual source of care had an increasing significance for those living at greater distances from the border (Wallace, 2009). These findings suggest that there are a number of factors that influence whether Hispanics access health services in Mexico or in the United States. Understanding how access to healthcare through health coverage relates to the utilization of healthcare

services along the U.S.-Mexico border among Hispanics in the El Paso, Texas can inform policy makers and our healthcare system how to facilitate health services to improve health outcomes.

CROSS-BORDER MOBILITY

Little data exists to quantify the number of patients that cross international borders for medical care and the associated gain/lost in revenues (Helbe, 2010). Terms used to describe this movement include: medical traveller, health tourism, and cross-border patient mobility (Glinos, Baeten, Helble, & Maarse, 2010; Helbe, 2010). Medical tourism has been used to discuss the phenomena of patients traveling internationally for medical services, often driven by individuals seeking medical care at lower costs or due to the availability of services (Horowitz, Rosensweig, & Jones, 2007). In the global health market hospitals have enticed patients by their advanced practice, new technologies, and in some cases obtaining accreditation by the accrediting bodies that regulate the quality of healthcare in the U.S., such as through the Joint Commission (Horowitz, Rosensweig, & Jones, 2007). In Europe, regulations and bi-lateral agreements have been set in place to ensure that individuals can cross national borders specifically for healthcare services, which became necessary with the movement of workers between European countries (Busse, 2002). A systematic review at the global level, that analyzed this movement of patients crossing international borders for healthcare services identified the following as motives driving this behavior: availability, affordability, familiarity, and perceived quality of services, within a funding schema of those with or without health coverage (Glinos, Baetan, Helble, Maarse, & Maarse, 2010).

Another significant body within the healthcare system to recognize the significance of cross-border patient mobility is the insurance industry. Some insurance providers have begun to work on insuring healthcare providers around the world or hospitals that offer services at lower costs (Horowitz, Rosensweig, & Jones, 2007). Cross-border mobility has implications for healthcare systems around the world and along the U.S.-Mexico border where there may be factors that favor seeking services in Mexico.

Cross-border Mobility in El Paso, Texas

The funding schema utilized to analyze cross-border mobility for healthcare services at the global level, with or without health coverage, shares commonalities with the findings discussed for utilization of healthcare services among Hispanics along the U.S.-Mexico border. Although Hispanics are at a disadvantage for health coverage, the dynamics that the U.S.-Mexico border plays through cross-border mobility may be of interest as it relates to utilization of health care services and other socio-demographic factors to reveal the variability within this population. Through the 2001 California Health Interview Survey, being uninsured, and living within fifteen miles from the border, independently increased the odds of going to Mexico for medical care among Mexican immigrants (Wallace, 2009). As for Mexican-Americans and U.S. born non-Latino whites in this study, prescription drugs were reported as the most utilized health-related service in Mexico (Wallace, 2009). Through a cross-sectional study, which looked at cross-border mobility among Hispanics residing in El Paso, Texas, certain associations were discovered for both the mobile and non-mobile groups. Among the mobile, the associated measures included: junior high as the highest level of education completed, survey completion in Spanish, schooled in Mexico, less years residing in the U.S. and utilization of health services in

Mexico. While the non-mobile, were associated with a higher income, high school as the highest level of education completed, survey completion in English, schooled in U.S., higher years residing in U.S., car ownership, and less likelihood to report utilizing health services in Mexico (Lapeyrouse et al., 2011). Although this study provides a glimpse of cross-border mobility among Hispanics in El Paso, in the context of having access to health services on either sides of the border, health coverage was not included in this schema.

Therefore, at global level cross-border mobility has demonstrated the potential to facilitate access to health services for some, but there remain gaps in the full understanding of this movement along the U.S.-Mexico border (Horton & Cole, 2011; Helbe, 2011).

HEALTH POLICY

Patient Protection & Affordable Care Act

Through the Patient Protection & Affordable Care Act passed in 2010 by congress, health coverage is expected to expand among citizens and individuals that hold a legal residence in the United States (DHHS, 2012). The competing state-based American Health Benefit Exchanges were proposed to facilitate availability of health coverage at a lower cost through the competing markets. Through governor Rick Perry though, the state of Texas will not have a state-based health insurance marketplace and Texas residents will have to access the federally created market place, which opened enrollment in October of 2013 (Texas Department of Insurance, 2013). This will have unknown consequences for residents of Texas. Through premium credits and cost-sharing subsidies, some may qualify for assistance if they fall between 100-400% federal poverty level (Kaiser Family Foundation, 2013). If individuals fall below the eligibility criteria, ideally would be eligible

for Medicaid dependent on state expansion of this program (U.S. Centers for Medicare & Medicaid, 2013). Again in Texas, governor Perry will not be expanding Medicaid with implications for marginalized Hispanics in the state of Texas. Based on the literature and new policies, those that will continue to be most compromised for healthcare coverage in the U.S. are Mexican migrants in border counties. Undocumented migrants will remain ineligible for Medicaid and other federally funded programs, which in addition to their other socioeconomic vulnerabilities, contribute to the poor access to healthcare (Lusk, Staudt, & Moya, 2012).

Through the Mexican department of health and ministry of foreign affairs, the program, "Ventanilla de Salud," serves as a health information resource for Mexican migrants that reside in the United States (Ventanilla de Salud, 2013), based in all 50 Mexican consular offices in the U.S. (Pan American Health Organization, 2012). In August of 2013, the Mexican federal commission for family development known as the, Desarrollo Integral de La Familia (DIF), signed agreements where upon Mexican migrants living in Texas are able to receive health coverage through the Mexican federal program, the "Seguro Popular." Through the Seguro Popular, Mexican migrants and their families in El Paso, Texas are able to gain access to healthcare services in Mexico.

GOALS & OBJECTIVES

The goal of this study is to understand access to healthcare through health coverage and utilization of healthcare services among Hispanics residing along the U.S.-Mexico border.

The objectives of this study were to (1) describe access to healthcare through health coverage, utilization of healthcare services and other factors and to (2) assess the association between utilization and (a) access to health services through health coverage; (b) cross-border mobility; and (c) other socio-demographic characteristics among Hispanics living in El Paso, Texas.

STUDY AIMS & HYPOTHESES

Among self-identified Hispanics in El Paso, Texas, this study aims were to determine:

1) the prevalence of utilization of healthcare services in the U.S. and in Mexico.
2) the prevalence of cross-border mobility, access to healthcare through health coverage, and other socio-demographic characteristics.
3) Factors independently associated with utilization of healthcare services in the U.S. and in Mexico, including access through health coverage, cross-border mobility, and other socio-demographic characteristics.

The following hypotheses will be assessed based on the based on the third aim:

1) Rates for utilization of healthcare services will differ by socio-demographic characteristics.
2) Rates for access to healthcare through health coverage will differ by socio-demographic characteristics.
3) The proportion of those utilizing services will be higher for those with access to healthcare through health coverage in the United States.
4) The length of time since last utilization of healthcare services will be shorter for those with access to healthcare through health coverage.
5) The proportion of those utilizing healthcare services in Mexico will be higher for those without access to healthcare through health coverage in the United States.
6) Among those who report crossing the border, rates for utilization of healthcare services in Mexico will be higher for those with higher frequency of cross-border mobility.

METHODS & MATERIALS

PARENT STUDY

STUDY PARTICIPANTS

The participants in the parent study were recruited as two separate samples. For both samples, participants had to be of 18 years of age and over, and had to reside in El Paso, Texas at the time that the interview was taken. The primary sample consisted of participants whom self-identified as Hispanic. The secondary sample consisted of marginally housed individuals without ethnicity/race criteria.

SAMPLE SIZE

The parent study included a total sample of 1250 participants, 959 participants from the primary sample who self-identified Hispanics and 291 participants from the secondary sample of individuals with marginal housing. Of the 291 participants that came from the secondary sample, (199) self-identified as Hispanic.

STUDY DESIGN

The parent study was a cross-sectional study that included quantitative and qualitative methods to include multiple choice and open-ended questions. Participants were recruited using theoretical/convenience sampling to provide an equal representation of the population by gender, age, and location across El Paso, Texas.

MEASURES

The measures in the parent study included questions to the participants, which assessed the socio-demographic characteristics, migration history, health outcomes and access to health and social services, cross-border mobility, and housing variables to determine the social determinants of health for Hispanics and mobile populations in El

Paso, Texas. The inquired socio-demographic characteristics included place of birth of the participant and parents, education, employment, income, language (English and/or Spanish), and citizenship status.

For the migration measures, participants where asked with regards to their family ties, types of transnational communication, and whether remittances were being sent home and why. Health outcomes and services measures included questions that addressed the participant's health conditions, health coverage and utilization of health services (United States and/or Mexico). To assess for cross-border mobility to Ciudad Juárez, frequency, motives, and perceived barriers were included. An additional set of questions were included for those participants identified as marginally housed which included living conditions (sleeping arrangements) and behaviors, self-perception of present state of homelessness, mental health, and substance use.

DATA COLLECTION

The cross-sectional survey in the parent study contained closed and open-ended questions that were administered through face to face interviews, for the length of an hour to participants that met the inclusion criteria of the parent study, in either English or Spanish dependent on the participant's preference. Participants had to be 18 years of age or older, self-identify as Hispanic or identify themselves as living in marginal housing conditions, between 2011 and 2012 in El Paso, Texas. These interviews were audio-recorded and the participants' responses were written on the paper surveys collected by the interviewers. Both the recordings and the paper surveys were kept under secure conditions with limited access by the primary investigator and hired research assistants.

HUMAN SUBJECTS PARTICIPATION

The parent study, "Social Determinants of Physical and Mental Health of Migrant and Transient Populations: Health Disparities amongst Hispanics in El Paso," was approved through the University of Texas at El Paso IRB [Reference #: 271104-3]. *Refer to Appendix I for IRB approval letter.*

THESIS STUDY

STUDY PARTICIPANTS

For the purpose of this secondary analysis, the sample included those participants that self-identified as Hispanic, where of 18 years of age and older, and those whom resided in El Paso, Texas at the time of when the interviews were taken through the parent study between 2011 and 2012. Therefore, participants for this sample will come from the primary sample of the parent study and those individuals that met the inclusion criteria mentioned above from the secondary sample of the parent study.

SAMPLE SIZE

A total of 1158 participants were included for this study, of which 959 participants were from the primary sample among self-identified Hispanics, and 199 participants from the secondary sample among marginally housed participants that met the inclusionary criteria mentioned above.

STUDY DESIGN

The study design for this secondary analysis follows that of the parent study. This was a cross-sectional study that used theoretical/convenience sampling. This study only utilized the quantitative data collected through the parent study.

MEASURES

Socio-demographic Characteristics

The following socio-demographic characteristics were used in this analysis, age (years of age), gender (male/female), citizenship status (U.S. citizen, resident, undocumented, and legal visa), educational level (high school or less, or more than high school), and employment (yes, or no). For income, the approximate household income was reported as: low ($30,000 or less), middle (more than $30,000 to $60,000), or high (more than $60,000). Also, assessed as part of the socio-demographic characteristics included whether the participants homeless (yes, or no), immigrant generation (first, 1.5, second, and third or more), language most spoken (only Spanish, Spanish more than English, Spanish and English equally well, English more than Spanish, English only, and other languages), and country of birth that included: U.S., Mexico, and other.

Access to Healthcare through Health Coverage

The measures utilized to assess access to healthcare through health coverage and possible barriers included the following: medical coverage through health insurance (yes, or no), declined medical treatment within the past year due to cost (yes, or no). Also, assessed whether individuals had needed health care services in the past twelve months but had not been able to receive (yes, or no), and reasons for not seeking care in the U.S. in the past three years, to include financial problems and fear of deportation (yes, or no). Among those who had sought medical care in Mexico within the past three years, fear of not being allowed back to the U.S. was assessed (yes, or no).

Utilization of Healthcare Services

The following questions were included in this analysis to assess for utilization of healthcare services. Whether in-patient services were accessed in the last six months (yes, or no), and if so, within which of the following settings: substance abuse treatment center, psychiatric facility, jail/prison/half-way house, medical hospital, and or other. Participants were asked the length of time from their last routine medical check-up (less than 6 months ago, 6 months to 1 year, or more than a year ago), the countries where medical treatments were sought (U.S., Mexico, or both), and reasons for seeking medical care in each country (trust in doctor/clinic, cost, and familiarity with health care system). Individuals were asked whether they'd had accessed medical care or purchased pharmaceuticals in Mexico in the past three years (often, sometimes, or never), and if so the reasons to include cost, prescriptions not needed, and trust/familiarity with medications (yes, or no). For those who purchased pharmaceuticals in the U.S., the reasons were also assessed: cost, trust/familiarity with medications, and advice from doctor or pharmacist (yes, or no).

Cross-border Mobility

The cross-border mobility measures in this analysis included: ever gone to Ciudad Juárez (yes, or no), frequency of mobility among the mobile to Ciudad Juárez (weekly, monthly, yearly), and among those who cross the border to Ciudad Juárez, whether individuals had fear of detainment by U.S. immigration (yes, or no). Also, the main reasons for no longer crossing the border to Ciudad Juárez, included: drug war, safety, and immigration laws (yes, or no).

DATA COLLECTION

In this study, no additional interviews were collected and therefore the data collection methods were those of the parent study. Quantitative data from the face-to-face one-hour interviews with participants that fit the inclusion criteria of this study were used.

STATISTICAL ANALYSES

Database Management

In the parent study, trained research assistants transferred responses from the paper surveys to an SPSS Statistics v21.0 database. The data set included a total of 591 variables from the survey that had contained 168 survey questions. The data set included a total of 591 variables from the survey that had contained 168 survey questions. For this analysis the following variables were created or recoded: immigrant generation, time since last medical check-up, accessed inpatient services in past 6 months, and frequency of visits to Ciudad Juárez.

The immigrant generation variable was created to determine which migrant generation the participant represented based on the place of birth measure (participant, parents, and grandparents). This created variable in the parent study, was only considered for those participants that self-identified as Hispanic and included five categories (1st, 1.5, 2nd, 3rd, and 4th). If participants were born abroad, they were considered first generation, 1.5 if they came to the U.S. as a child (less or equal to 18 years of age), 2nd if born in the U.S., 3rd if parents born in U.S., and 4th if grandparents were born in the United States. For this analysis, those individuals that were of 3rd and 4th immigrant generation were collapsed into one category, as being of 3rd immigrant generation or more.

The time since last medical check-up variable was originally an open-ended question. These responses were entered into the database and then recoded into the following categories: less than 6 months, 6 months to 1 year, more than 1 year to 3 years, more than 3 years to 5 years, more than 5 years to 15 years, more than 15 years, and never. When it was discovered that these categories had a low cell count for each level, the levels were collapsed to: less than 6 months, and 6 months to 1 year, and more than one year. It is important to note that more than one year included those individuals that indicated never having accessed medical care in their lifetime.

In the question that addressed accessing inpatient services in the past 6 months, the options included drug/alcohol treatment center, psychiatric facility, jail/prison/half-way house, medical hospital, none, and other. New variables were created to assess whether participants had indicated having accessed any services (yes or no) and which inpatient services had been accessed from the options mentioned above.

The cross-border mobility measure, frequency of visits to Ciudad Juárez, was asked of those who indicated having ever gone to Ciudad Juárez. The frequency of visits to Ciudad Juárez, included daily, four times a week, three times a week, twice a week, once a week, once a month, once every 3 to 6 months, and once a year. For this analysis, the categories for frequency of visits to Ciudad Juárez, were collapsed, to weekly (daily, four times a week, three times a week, twice a week, and once a week), monthly (once a month), and yearly (once every 3 to 6 months, and once a year).

Analysis Plan

Appropriate univariate analyses, and bivariate associations were performed for this study. The analyses were conducted using SPSS Statistics v21.0. In the univariate analysis, median and quartiles were calculated for the continuous variables, and frequency and percents were calculated for the categorical variables. Descriptive statistics were provided for each of the measures for socio-demographics characteristics, access to healthcare through health coverage, utilization of health services, and cross-border mobility. Bivariate analysis using Pearson Chi-Square test or Likelihood Ratio test were used to determine the independent associations between each of the measures. For the bivariate analysis of the continuous variable, age, the Mann Whitney-U test was used for the binary outcome, having health insurance and the Kruskall-Wallis test was used for those with outcomes of three or more, time since last medical check-up, countries where medical treatment was sought, and accessed medical care in Mexico in past three years. Significant statistical associations were determined by a p-value less than 0.05.

HUMAN SUBJECTS PARTICIPATION

IRB exemption was obtained for this secondary analysis, project title: [502363-1] Cross-Border Mobility, Access to Healthcare through Health Coverage, and Other Correlates for Utilization of Healthcare Services along the U.S.-Mexico Border, through the University of Texas at El Paso IRB, effective August 26, 2013. This study did not involve human subject participation. *Refer to Appendix II for IRB approval letter.*

RESULTS

A total of 1,152 participants were included in this study. All univariate and bivariate results are presented in Table 1, entitled "Descriptive Statistics and Bivariate Associations with Measures for Access to Health Care in the U.S. and Mexico in the Past Years, among Hispanic Adults living in El Paso, TX".

UNIVARIATE ANALYSIS

SOCIO-DEMOGRAPHIC CHARACTERISTICS

The median age of the sample was 30 (quartiles: 23, 49) years old. The sample included slightly more females (53.6%) than males (46.4%), similar to the demographics of El Paso county (51.1%) (United States Census Bureau, 2012). For citizenship, the majority were U.S. citizens (74.1%), and the rest were residents (17.3%), held a legal status (2.9%), or undocumented (5.7%). More than half had an educational level that was more than high school (53.9%) and were of low income (59.4%). Nearly one fifth of the sample was homeless (17.4%), one third of sample were second-generation immigrants (30.1%), and (75.4%) spoke both English and Spanish. Overall, less than 60% held employment (57.1%) and were born in the U.S. (58.1%).

ACCESS TO HEALTHCARE THROUGH HEALTH COVERAGE

More than half of the participants did not have health insurance (55.4%); among those who did, about twenty percent reported having a private healthcare plan (20.1%). Most participants indicated not having sought medical care due to cost (82.5%). Similarly, 82.6% indicated having needed health care services in the past 12 months but were unable to receive it. Of those that had utilized medical care in Mexico in the past 3 years (34.0%), 10.6% stopped due to fear of not being allowed back into the U.S. Those who didn't seek

care in the U.S. in the past three years, 35.8% reported that they didn't due to financial reasons and 5.0% due to fear of deportation.

UTILIZATION OF HEALTHCARE SERVICES

For the length of time since last medical check up measure, the sample was almost evenly divided into thirds for each of the possible options, (35.5%) more than a year ago, (31.3%) six months to one year ago, and (33.2%) less than six months ago. A majority of participants (85.5%) had not accessed inpatient services in the past six months. Of those who had indicating having accessed inpatient services (14.5%) in the past six months, medical hospital was the inpatient setting most accessed (52.5%). The U.S. was the country where most medical treatment was sought, accounting for (69.0%) of the sample, followed by in Mexico (15.3%), and (15.7%) accessed medical treatment in both countries.

Among those participants who indicated they often or sometimes accessed medical care in Mexico in the past three years (34.0%), more than half indicated it was due to cost (55.6%), followed by trust in the doctor/clinic in Mexico (31.5%). Also, 86% of participants indicated having often or sometimes purchased pharmaceuticals in Mexico in the past three years, of those that sought care in Mexico. The most common reason for purchasing pharmaceuticals in Mexico was cost (80.1%). For those individuals that utilized medical care in the U.S. (56.4%), trust in U.S. doctor (45.4%), followed by familiarity with U.S. healthcare (16.5%). For those that had purchased pharmaceuticals in the U.S., trust or familiarity with U.S. medications were the most common reason (31.8%).

CROSS-BORDER MOBILITY

Among those who indicated ever having gone to Ciudad Juárez (39.9%), almost forty percent indicated they went weekly (39.3%), and most participants indicated not having

fear of being detained by U.S. immigration (92.7%). Among those individuals that no longer crossed the border to Ciudad Juárez (63.5%), this was due to the drug war (47.2%), safety (17.2%), and immigration laws (4.0%).

BIVARIATE ANALYSIS

HEALTH INSURANCE

Health insurance was significantly associated with most measures. Those that were statistically significant as part of the socio-demographic measures included: gender ($p=0.03$), citizenship ($p<0.001$), education level ($p<0.001$), income ($p<0.001$); homelessness ($p<0.001$), immigrant generation ($p<0.001$); language ($p<0.001$); employment ($p<0.001$); and country of birth ($p<0.001$). The only socio-demographic measure that was not associated with health insurance was age.

Health insurance was also statistically significantly associated to most of the access to healthcare measures including declined medical care due to cost ($p=0.039$), having needed health care services but unable to receive in the past 12 months ($p<0.001$), not seeking care in U.S. in the past three years due to financial problems ($p<0.001$), or due to fear of deportation ($p<0.001$). The only measure not associated with having healthcare insurance, were those who had stopped seeking medical care in Mexico in the past three years due to fear of not being allowed back into the U.S.

Several measures for utilization of healthcare services were statistically associated to health insurance, which included time since last medical check-up ($p<0.001$), the settings where inpatient services had been accessed in the past six months ($p=0.002$), countries where medical treatment was sought ($p<0.001$), having accessed medical care in

Mexico in the past three years ($p<0.001$), and the various reasons provided for having utilized medical care in Mexico in the past three years ($p=0.05$). Also, those who had purchased pharmaceuticals in Mexico in the past three years due to the cost ($p=0.001$) and or because prescriptions were not needed ($p=0.022$), were statistically significant. Those who had utilized medical care in the U.S. due to trust in the U.S. doctor or clinic ($p=0.002$), in addition to those who had purchased pharmaceuticals in the U.S. due to trust or familiarity with medications in the U.S. ($p=0.015$), were also statistically significantly associated to health insurance.

The measures not statistically significantly associated with health insurance included: having accessed inpatient services in the past 6 months, the frequency for those having purchased pharmaceuticals in Mexico in the past three years, trust or familiarity with medications in Mexico as the reason for having purchased pharmaceuticals in Mexico, cost and familiarity with U.S. healthcare system as reasons for having utilized medical care in the U.S., and cost and advice from the doctor/pharmacists as reasons for having purchased pharmaceuticals in the U.S.

The cross-border measures that were associated with having health insurance included having ever gone to Ciudad Juárez ($p<0.001$), the frequency of visits to Ciudad Juárez among those go ($p=0.002$), those who no longer cross the border to Ciudad Juárez and indicated this was due to the "drug war" ($p=0.008$) or due to immigration laws ($p<0.001$). The cross-border mobility measures not associated with health insurance included fear of detainment by those who cross the border to Ciudad Juárez, and safety as the reason for those who no longer going to Ciudad Juárez.

TIME SINCE LAST MEDICAL CHECK-UP

Several of the socio-demographic characteristics were statistically significant with time since last medical check-up, these included age ($p<0.001$), gender ($p=0.001$), income ($p<0.001$), homelessness ($p=0.017$), immigrant generation ($p=0.020$), language ($p<0.001$), employment ($p=0.012$), and country of birth ($p<0.001$). Those measures that were not associated to time since last medical check-up included citizenship, and education level.

For the access to healthcare measures, a few measures were statistically associated to time since last medical check-up, which were health insurance ($p<0.001$), having needed health care services in the past twelve months, but not having been able to receive ($p<0.001$), and those that had not sought medical care in the U.S. due to financial problems ($p<0.001$). The measures that were not associated with time since last medical check-up were those that had declined medical care in the last year due to cost, those that had stopped utilizing medical care in Mexico in the past three years due to fear of not being allowed back to the U.S., and those that had not sought care in the U.S. in the past three years due to fear of deportation.

There were few measures for utilization of healthcare services that were statistically significantly associated to time since last medical check-up, the settings where inpatient services had been accessed in the past six months ($p=0.002$), countries where medical treatment was sought ($p=0.022$), and those that had purchased pharmaceuticals in the U.S. due to cost ($p=0.001$).

Those measures not associated with time since last medical check-up included having accessed inpatient services in the past six months, having accessed medical care in Mexico in the past three years and the reasons selected for those having done so, having

purchased pharmaceuticals in the Mexico in the past three years and the reasons provided for having done so. Also, not statistically associated with time since last medical check-up were having utilized medical care in the U.S. due to trust in U.S. doctor, cost and familiarity with U.S. healthcare system, and having purchased pharmaceuticals in the U.S. due to trust or familiarity with medications in the U.S. or due to the advice provided by doctor of pharmacist.

For cross-border mobility there were no significant measures associated with time since the last medical check-up.

COUNTRIES WHERE MEDICAL TREATMENT WAS SOUGHT

Several of the socio-demographic measures were associated with the countries where medical treatment was sought. These included age ($p=0.038$), citizenship ($p<0.001$), education level ($p=0.011$), homelessness ($p=0.029$), immigrant generation ($p<0.001$), language ($p<0.001$), and country of birth ($p<0.001$). Those questions that were not associated with countries where medical treatment was sought included gender, income, and employment.

Those measures for access to healthcare that had a significant association to the countries where medical treatment was sought included, having health insurance ($p<0.001$), having needed health care services in the past twelve months but not having received ($p=0.017$), and not having sought care in the U.S. in the past three years because of financial problems ($p<0.001$). The measures not associated included having declined medical care in the last year due to cost, having stopped utilizing medical care in Mexico the past three years due to fear of not being allowed back into the U.S., and not having sought medical care in the U.S. in the past three years due to fear of deportation.

There were several measures for utilization of healthcare services that were associated with countries where medical treatment was sought. These included, length of time since last medical check-up ($p=0.022$), inpatient services accessed in the past six months ($p=0.001$), having purchased pharmaceuticals in Mexico in the past three years ($p<0.001$), having utilized medical care in the U.S. due to trust in U.S. doctor or clinic ($p=0.018$) and due to familiarity with U.S. health care ($p<0.001$), and having purchased pharmaceuticals in the U.S. due to trust or familiarity with medications in the U.S. ($p<0.001$). The measures for utilization of healthcare services that were not associated to countries where medical treatment sought were the services that were accessed among those who had accessed inpatient services in the past six months, the reasons provided for having accessed medical care in Mexico in the past three years, the reasons provided for having purchased pharmaceuticals in Mexico in the past three years, having utilized medical care in the U.S. due to cost, and having purchased pharmaceuticals in the U.S. due to cost or due to the advice provided by the doctor/pharmacist.

The cross-border mobility measures that were statistically associated with countries where medical treatment was sought, were whether the participant had ever gone to Ciudad Juárez ($p<0.001$), and the frequency of visits to Ciudad Juárez ($p<0.001$). While the measures not associated included, those that crossed the border to Ciudad Juárez but indicated having fear of detainment by U.S. immigration, and having indicated no longer crossing the border to Ciudad Juárez due to, "drug war," safety, or immigration laws.

ACCESSED MEDICAL CARE IN MEXICO IN PAST 3 YEARS

There were very few measures associated with having accessed medical care in Mexico in the past three years. The only socio-demographic characteristic associated with

having accessed medical care in Mexico in the past three years, was gender ($p=0.016$). There were no measures under access to healthcare that were associated with having accessed medical care in Mexico in the past three years.

The measures for utilization of healthcare services associated with having accessed medical care in Mexico the past three years, included the inpatient services that were accessed in the past six months ($p=0.026$), countries where medical treatment was sought ($p<0.001$), and whether pharmaceuticals had been purchased in Mexico in the past three years ($p<0.001$). Those measures not associated with having accessed medical care in Mexico in the past three years included time since last medical check up, having accessed inpatient services in the past six months, the reasons provided for those who had utilized medical care in Mexico the past three years, the reasons provided for those who had purchased pharmaceuticals in Mexico the past three years, the reasons provided by those who had utilized medical in the U.S., and the reasons for those that had purchased pharmaceuticals in the U.S.

The only cross-border mobility measure associated with having accessed medical care in Mexico in the past three years was whether they'd ever gone to Ciudad Juárez ($p<0.001$). The measures not associated included the frequency of visits to Ciudad Juárez among those who go, fear of detainment for those that cross the border to Ciudad Juárez, and no longer crossing the border to Ciudad Juárez due to the "drug war," safety, or immigration laws.

DISCUSSION

SOCIO-DEMOGRAPHIC CHARACTERISTICS

There were several socio-demographic characteristics that gave contextual insight on access to healthcare among Hispanics along the U.S.-Mexico border. Gender was significantly associated with health insurance, time since last medical check-up, and countries where medical treatment is sought, but not associated with medical care accessed in Mexico in the last three years. It was noted, that more women indicated having accessed medical care in Mexico in the last three years than men (86.6% vs. 73.9%), similar to findings in the cross-border utilization study in Texas (Su, Richardson, Wen, & Pagan, 2011). Women also had a shorter length of time since their last medical check-up (up to one year ago, or more than a year ago) than the men (71.5% vs. 56.0%). For citizenship, which was associated with both health insurance and countries where medical treatment was sought, the undocumented had the highest percent of uninsured (87.9%), similar to findings in other studies (Wallace, 2009; Rutledge & McLaughlin, 2008; Ortega, 2007). The undocumented sought medical treatment at a higher percent in the U.S. than in Mexico, and this was perhaps due to their undocumented status and fear of being deported (Wallace, 2009). There were individuals that indicated not seeking medical care in the U.S. due to fear of deportation, and which were more likely to be uninsured, highlighting the challenges for these populations.

The findings for education level was consistent with a previous cross-border mobility study, both statistically significant with health insurance and where medical treatment was sought (Su, Richardson, Wen, & Pagan, 2011). Those individuals with more than high school education had a higher percent of insured (54.0%) and a proportion of

individuals that sought medical treatment in Mexico and or both countries, instead of exclusively in the United States. Also expected, those of higher income were more likely to be insured and to have a shorter length of time (up to one year, or more than a year) since their last medical check-up (78.0%) than those of middle (66.6%) and low income (61.6%). This begins to illustrate part of the challenges for having insurance and or the utilization of health services when more than half of this sample were low income (59.4%).

Through immigrant generation, it was noted the first generation were most likely to be uninsured. As immigrant generation increases with each generation, the proportion of medical treatment sought in the U.S. increased but decreased in Mexico. This may indicate that those of first generation are at higher risk for not having coverage and not accessing care in the United States for various possible reasons. Through language and country of birth, it was apparent that those that only spoke Spanish or were born in Mexico were least likely to be insured, yet with increasing English fluency, likelihood for having insurance increased respectively. Also noted, for those that were born in the U.S. or only spoke English, a decreasing likelihood of seeking medical care in Mexico was observed. Although not being insured certainly poses a great barrier to healthcare services in the U.S., for some Mexico may remain as a viable option for healthcare services.

ACCESS TO HEALTHCARE THROUGH HEALTH COVERAGE

This analysis found that health insurance was statistically significantly associated with most measures. The insured were more likely to access care in the U.S. and to have a shorter length of time since their last medical check-up, while those that were uninsured were more likely to have sought medical treatment in Mexico. This highlights the

contextual relation that not having insurance has for some Hispanics that reside in El Paso, Texas.

Income, health insurance, utilization of healthcare services and which countries they were seeking services were interrelated. For example those that declined medical care due to cost or had needed healthcare services but were not able to receive were both associated with not having health insurance. Those individuals that were unable to seek care in the U.S. due to financial, were less likely to have insurance, more likely to have more than one year since their last medical check up, and a higher proportion sought treatment in Mexico.

UTILIZATION OF HEALTHCARE SERVICES

As predicted, the proportion of those that had accessed medical care in Mexico in the past three years were higher for those without health insurance. Of the individuals that selected cost as the primary reason for having utilized medical care in Mexico in the past three years, the majority was uninsured (74.5%). Those that purchased pharmaceuticals in Mexico in the past three years due to cost, were more likely to be uninsured. Hence, indicating that services and pharmaceuticals in Mexico may be what are accessible not necessarily their choice.

For those that did seek medical care in the U.S., the majority of individuals indicated this was not due to trust (54.6%) or familiarity with U.S. healthcare system (83.5%), indicating that there were other reasons such as where their insurance is accepted. Although, participants that did indicate having trust in the U.S. physicians or being familiar with medications in the U.S. were more likely to be insured.

CROSS-BORDER MOBILITY

The cross-border mobility measure, for those individuals having ever gone to Ciudad Juárez, had a higher proportion of uninsured (61.5%). As would be expected, those that had gone to Ciudad Juárez, had a higher proportion of individuals that indicated sought treatment in Mexico. Also noted, the higher the frequency of visits to Ciudad Juárez, respectively was associated with an increased likelihood of being uninsured and or seeking care in Mexico versus in the United States. This again illustrates the context under which health services are utilized along the El Paso, Texas border. Also of interest were those individuals that indicated they no longer crossed the border to Ciudad Juárez due to the, "drug war," which were uninsured (45.8%), and participants that indicated no longer crossed to Ciudad Juárez due to immigration laws, which were also uninsured (93.1%). This identifies that at one time some uninsured Hispanics were crossing to Mexico, possibly for health services.

Based on these findings, having health insurance is an important determinant for accessing healthcare services, to include in which country services are utilized and the time elapsed since their last medical check-up. Several of the significant associations were consisted with the predicted hypotheses: rates for utilization of health care services did differ by socio-demographic characteristics. The rates for access to healthcare through health insurance i.e., health coverage did differ by socio-demographic characteristics. The proportion of those that utilized services were higher for those with access to healthcare through health insurance i.e., health coverage in the United States. The length of time since last utilization of health services were shorter for those with access to healthcare through health insurance i.e., health coverage. The proportion of those utilizing health care services

in Mexico were higher for those without access to healthcare through health insurance i.e. health coverage in the U.S. Among those who reported crossing the border, rates for utilization of healthcare services in Mexico were higher and also higher for those with a higher frequency of cross-border mobility.

Therefore, Hispanic El Pasoans are marginalized for health coverage and utilization of health care services in the U.S. based on income, education level, citizenship status, migration generation, and language. Cross-border mobility to Ciudad Juárez, did afford access to health services and pharmaceuticals in Mexico for those that may find healthcare services in the U.S. inaccessible. Certainly though, health insurance does seem to be an important determinant for utilization of health care services and where medical treatment is sought.

LIMITATIONS & STRENGTHS

There were analytical and methodological limitations in this analysis. Some of the analytical limitations included the following: having only included the quantitative data collected in the parent study. Participants provided narratives, and elaborate responses to the some of the questions that were collected through the audio recordings and notations made by the interviewers within the paper surveys in the parent study. These responses could have supplemented the findings of this analysis. This secondary analysis focused on health coverage (i.e., health insurance) and did not include measures on mental health, chronic disease, and substance abuse which were collected through the parent study. In the parent study, gender was based on the interviewers perception of the participants' sex, but did not provide for participants to self-identify their sex or gender. Household size was not assessed in the parent study. Household size, along with the income measure, could have

provided a more accurate description of the proportion of the participants that were under the poverty threshold level.

Some of the methodological limitations included that the study design was cross-sectional which does not allow for causal relations to be identified. There may have been an over-representation of low-income participants through the inclusion of Hispanics from the secondary sample in the parent study, which consisted of self-identified marginally housed individuals. Although there are limitations as to how generalizable the findings of this study are to other Hispanic groups in the U.S., these were consistent with other cross-border health utilization studies among Hispanics in border counties and illustrates some of the contextual barriers for access to healthcare.

The strengths of this study included the focus on access to healthcare services through health insurance, the sample size, and the inclusion of marginalized populations including those who are marginally housed and undocumented participants. As previously discussed, although studies such as the Behavioral Risk Factor Surveillance System survey have assessed for health insurance coverage in El Paso Texas, recent publications have not made distinctions by ethnicity, race, and citizenship status which can gloss over the level of marginalization for some of these groups when it comes to health insurance coverage in El Paso, Texas. The parent study had a large sample size, which allowed for statistical analysis of several measures that may have otherwise been difficult to assess. The sampling methods of the parent study enabled for the inclusion of a substantial sample of both marginally housed and undocumented participants that are difficult populations to study given the sensitivity of their status. Based on the literature, undocumented migrants are

the most marginalized group in the U.S. and this population was represented in this secondary analysis.

IMPLICATIONS

The Patient Protection & Affordable Care Act, which seeks to extend health equity for U.S. citizens, will have varying implications for Hispanics in the United States and specifically those in Texas. Given that Texas will not be creating a state-based health insurance market nor expanding Medicaid, marginalized Hispanics may suffer the consequences of not having the benefit of purchasing insurance policies that may have otherwise been available at lower costs through competing markets, or that through the expansion of Medicaid may have been eligible for coverage. Although the Patient Protection & Affordable Care Act, will afford health insurance coverage for many Hispanics that were previously uninsured, there will remain a gap for those that are most marginalized, such as the undocumented.

Through binational collaborations such as through the U.S.-Mexico Border Health Commission, the Pan American Health Organization for the U.S.-Mexico Border, and other organizations, alternative strategies can be devised to improve health equity for populations on both sides of the border. Should cross-border mobility for healthcare services gain attention from the health insurance industry, binational health plans could facilitate healthcare services for populations that are able to legally cross international borders. Other alternatives would include work programs, which would allow for individuals to legally work in the U.S., have health coverage, or allow for legal movement across international borders to the Mexico when healthcare services are needed.

The success of any intervention to improve health equity will warrant a binational effort, as observed through the Ventanilla de Salud at the Mexican consulate in El Paso, Texas, that will offer health coverage through the Mexican federal health program, the Seguro Popular. Finding these alternative solutions are paramount for those populations that are most marginalized along the U.S.-Mexico border.

MPH CORE COMPETENCIES

The core competencies for Public Health are addressed through this study, to include social and behavioral sciences, biostatistics, and health services administration and policy.

Social & Behavioral Sciences

The purpose of this study is to understand the social constructs under which Hispanics in El Paso, Texas have access to health care services through health coverage and in turn how this associates to utilization of health services, within the context of the U.S.-Mexico border and cross-border mobility. Several of the socio-demographic measures such as income, educational level, employment, immigration generation and citizenship status were assessed as social determinants for utilization of health care services, and access through health coverage. Cross-border mobility as a unique behavior that is observed along the U.S.-Mexico border will be assessed as to how it relates to utilization of healthcare services and access through health coverage. Each of these analysis were performed for the sole purpose of having a further understanding of the variability found within the Hispanic population in El Paso, Texas and the health constructs for this border region.

Biostatistics

The statistical analyses in this study are based on the biostatistic core competencies. These included descriptive statistics as well as bivariate analysis that were used to determine the associations between utilization of health care services, and access to health care through health coverage, cross-border mobility, and the socio-demographic characteristics, within the context of the U.S.-Mexico border.

Health Services Administration and Policy

This analysis seeks to inform and understand health service administration and policy in the El Paso, Texas and within the context of the U.S.-Mexico Border. Understanding whether Hispanics in El Paso have health coverage and determining how this associates to utilization of health care services, can inform policy as to the populations that are at highest risk and how to best implement policy reform in the context of the U.S.-Mexico border. This study can also serve to inform what may be the protective factors for Hispanics in El Paso, Texas, in which case it would be recommended that these be further explored.

Hispanic and Border Health Concentration Competencies

The sample for this study included self-identified Hispanic adults with a focus on access to healthcare through health coverage and utilization of healthcare services. Based on the selected sample and variables selected for this analysis to assess the contextual factors marginalizing this border population, these should fulfill the concentration competencies for Hispanics and border health.

TABLE 1. Descriptive Statistics and Bivariate Associations with Measures for Access to Health Care in the U.S. and Mexico in the Past Years, among Hispanic Adults living in El Paso, TX.

Table 1. Descriptive Statistics and Bivariate Associations with Measures for Access to Health Care in the U.S. and Mexico in the Past (3) Years, among Hispanic Adults living in El Paso, TX.																				
	N	Overall	Health Insurance				Time Since Last Medical Check-Up					Countries Where Medical Treatment was Sought					Accessed Medical Care in Mexico in Past 3 Years				
			n	No freq (%)	Yes freq (%)	p-value	n	< 6 mo. freq (%)	6 mo. - 1 yr. freq (%)	> 1 year freq (%)	p-value	n	U.S. freq (%)	Mexico freq (%)	Both freq (%)	p-value	n	Often freq (%)	Sometimes freq (%)	Never freq (%)	p-value
SOCIODEMOGRAPHIC CHARACTERISTICS																				
Median Age (years), (Q1, Q3)	1112	30 (23,49)	1105	30 (24, 47)	31 (22, 50)	0.467	984	35 (24, 53)	30 (22, 45)	30 (23, 45)	**<0.001**	1040	31.5 (23, 49)	27 (22, 45)	29 (22, 48)	**0.038**	319	29 (23, 44.75)	26 (22, 43)	34 (22.75, 52.25)	0.065
Gender	1152		1144			**0.030**	1020				**<0.001**	1077				0.755	325				**0.016**
Male		535 (46.4%)		313 (58.8%)	219 (41.2%)			135 (29.2%)	124 (26.8%)	203 (43.9%)			335 (68.9%)	78 (16.0%)	73 (15.0%)			31 (21.2%)	77 (52.7%)	38 (26.0%)	
Female		617 (53.6%)		321 (52.5%)	291 (47.5%)			204 (36.6%)	195 (34.9%)	159 (28.5%)			408 (69.0%)	87 (14.7%)	96 (16.2%)			43 (24.0%)	112 (62.6%)	24 (13.4%)	
Citizenship	1152		1144			**<0.001**	1020				0.188	1077				**<0.001**	325				0.093
Citizen		854 (74.1%)		413 (48.6%)	436 (51.4%)			243 (31.6%)	251 (32.7%)	274 (35.7%)			614 (76.2%)	86 (10.7%)	106 (13.2%)			47 (25.1%)	102 (54.5%)	38 (20.3%)	
Resident		199 (17.3%)		146 (74.1%)	51 (25.9%)			67 (39.0%)	46 (26.7%)	59 (34.3%)			81 (44.3%)	55 (30.1%)	47 (25.7%)			15 (15.2%)	64 (64.6%)	20 (20.2%)	
Undocumented		66 (5.7%)		58 (87.9%)	8 (12.1%)			21 (41.2%)	10 (19.6%)	20 (39.2%)			38 (66.7%)	10 (17.5%)	9 (15.8%)			7 (38.9%)	8 (44.4%)	3 (16.7%)	
Legal Visa		33 (2.9%)		17 (53.1%)	15 (46.9%)			8 (27.6%)	12 (41.4%)	9 (31.0%)			10 (32.3%)	14 (45.2%)	7 (22.6%)			5 (23.8%)	15 (71.4%)	1 (4.8%)	
Education Level	1139		1131			**<0.001**	1007				0.065	1066				**0.011**	320				0.233
High school or less		525 (46.1%)		347 (66.2%)	177 (33.8%)			165 (36.9%)	127 (28.4%)	155 (34.7%)			355 (73.8%)	63 (13.1%)	63 (13.1%)			25 (20.3%)	69 (56.1%)	29 (23.6%)	
More than High school		614 (53.9%)		279 (46.0%)	328 (54.0%)			170 (30.4%)	188 (33.6%)	202 (36.1%)			382 (65.3%)	100 (17.1%)	103 (17.6%)			49 (24.9%)	116 (58.9%)	32 (16.2%)	
Income	1041		1036			**<0.001**	930				**<0.001**	979				0.064	296				0.501
Low		684 (59.4%)		475 (69.8%)	206 (30.2%)			209 (35.0%)	159 (26.6%)	229 (38.4%)			428 (67.8%)	108 (17.1%)	95 (15.1%)			45 (22.8%)	114 (57.9%)	38 (19.3%)	
Middle		243 (23.3%)		82 (34.0%)	159 (66.0%)			70 (31.3%)	79 (35.3%)	75 (33.5%)			160 (67.8%)	37 (15.7%)	39 (16.5%)			16 (21.3%)	47 (62.7%)	12 (16.0%)	
High		114 (11.0%)		17 (14.9%)	97 (85.1%)			35 (32.1%)	50 (45.9%)	24 (22.0%)			87 (77.7%)	7 (6.3%)	18 (16.1%)			8 (33.3%)	10 (41.7%)	6 (25.0%)	
Homelessness	1152		1144			**<0.001**	1020				**0.017**	1077				**0.029**	325				0.203
Yes		201 (17.4%)		161 (80.9%)	38 (19.1%)			55 (32.0%)	41 (23.8%)	76 (44.2%)			129 (76.3%)	15 (8.9%)	25 (14.8%)			10 (25.6%)	18 (46.2%)	11 (28.2%)	
No		951 (82.6%)		473 (50.1%)	472 (49.9%)			284 (33.5%)	278 (32.8%)	286 (33.7%)			614 (67.6%)	150 (16.5%)	144 (15.9%)			64 (22.4%)	171 (59.8%)	51 (17.8%)	
Immigrant Generation	1151		1143			**<0.001**	1019				**0.020**	1076				**<0.001**	324				0.232
First		254 (22.1%)		164 (65.3%)	87 (34.7%)			88 (42.7%)	57 (27.7%)	61 (29.6%)			109 (46.8%)	72 (30.9%)	52 (22.3%)			30 (25.0%)	71 (59.2%)	19 (15.8%)	
1.5		278 (24.2%)		163 (59.1%)	113 (40.9%)			88 (34.5%)	82 (32.2%)	85 (33.3%)			159 (60.5%)	54 (20.5%)	50 (19.0%)			21 (20.6%)	66 (64.7%)	15 (14.7%)	
Second		347 (30.1%)		186 (53.8%)	160 (46.2%)			93 (29.4%)	96 (30.4%)	127 (40.2%)			245 (75.4%)	33 (10.2%)	47 (14.5%)			18 (23.1%)	40 (51.3%)	20 (25.6%)	
Third or more		272 (23.6%)		121 (44.8%)	149 (55.2%)			69 (28.5%)	84 (34.7%)	89 (36.8%)			230 (90.2%)	6 (2.4%)	19 (7.5%)			5 (20.8%)	11 (45.8%)	8 (33.3%)	
Language (most spoken)	1137		1131			**<0.001**	1013				**<0.001**	1069				**<0.001**	324				0.102
Only Spanish		210 (18.5%)		151 (72.2%)	58 (27.8%)			84 (47.7%)	33 (18.8%)	59 (33.5%)			95 (51.1%)	50 (26.9%)	41 (22.0%)			19 (21.8%)	48 (55.2%)	20 (23.0%)	
Spanish more than English		235 (20.7%)		149 (64.2%)	83 (35.8%)			74 (35.4%)	70 (33.5%)	65 (31.1%)			103 (45.6%)	75 (33.2%)	48 (21.2%)			31 (25.6%)	75 (62.0%)	15 (12.4%)	
Spanish and English equally well		346 (30.4%)		162 (47.0%)	183 (53.0%)			99 (31.3%)	102 (32.3%)	115 (36.4%)			238 (72.3%)	36 (10.9%)	55 (16.7%)			16 (18.2%)	55 (62.5%)	17 (19.3%)	
English more than Spanish		276 (24.3%)		130 (47.1%)	146 (52.9%)			69 (27.1%)	92 (36.1%)	94 (36.9%)			237 (90.1%)	4 (1.5%)	22 (8.4%)			6 (23.1%)	11 (42.3%)	9 (34.6%)	
English only		64 (5.6%)		29 (46.0%)	34 (54.0%)			12 (23.1%)	17 (32.7%)	23 (44.2%)			57 (96.6%)	0 (0.0%)	2 (3.4%)			1 (50.0%)	0 (0.0%)	1 (50.0%)	
Other Languages		6 (0.5%)		2 (33.3%)	4 (66.7%)			0 (0.0%)	3 (60.0%)	2 (40.0%)			6 (100.0%)	0 (0.0%)	0 (0.0%)			0 (0.0%)	0 (0.0%)	0 (0.0%)	
Employment	1135		1127			**<0.001**	1007				**0.012**	1061				0.099	318				0.730
Yes		648 (57.1%)		312 (48.4%)	332 (51.6%)			178 (30.4%)	201 (34.4%)	206 (35.2%)			411 (66.6%)	99 (16.0%)	107 (17.3%)			43 (21.5%)	119 (59.5%)	38 (19.0%)	
No		487 (42.9%)		311 (64.4%)	172 (35.6%)			160 (37.9%)	112 (26.5%)	150 (35.5%)			323 (72.7%)	60 (13.5%)	61 (13.7%)			29 (24.6%)	65 (55.1%)	24 (20.3%)	
Country of Birth	1146		1138			**<0.001**	1017				**<0.001**	1072				**<0.001**	322				0.277
U.S.		666 (58.1%)		333 (50.3%)	329 (49.7%)			171 (28.6%)	190 (31.8%)	237 (39.6%)			498 (79.6%)	52 (8.3%)	76 (12.1%)			26 (20.8%)	68 (54.4%)	31 (24.8%)	
Mexico		470 (41.0%)		296 (63.5%)	170 (36.5%)			163 (39.8%)	123 (30.0%)	124 (30.2%)			235 (53.9%)	111 (25.5%)	90 (20.6%)			45 (23.1%)	119 (61.0%)	31 (15.9%)	
Other		10 (0.9%)		2 (20.0%)	8 (80.0%)			3 (33.3%)	6 (66.7%)	0 (0.0%)			8 (80.0%)	0 (0.0%)	2 (20.0%)			1 (50.0%)	1 (50.0%)	0 (0.0%)	
ACCESS TO HEALTHCARE																				
Health Insurance	1144						1015				**<0.001**	1072				**<0.001**	323				0.503
Yes		510 (44.6%)						197 (41.5%)	178 (37.5%)	100 (21.1%)			395 (80.0%)	26 (5.3%)	73 (14.8%)			22 (22.9%)	52 (54.2%)	22 (22.9%)	
No		634 (55.4%)						141 (26.1%)	140 (25.9%)	259 (48.0%)			345 (59.7%)	138 (23.9%)	95 (16.4%)			51 (22.5%)	136 (59.9%)	40 (17.6%)	
Type of Health Insurance	514																			
Private healthcare plan		232 (20.1%)																		
Limited Private health care plan		0 (0%)																		
Medicaid		69 (6.0%)																		
Medicare		28 (2.4%)																		
VA		9 (0.8%)																		
Tricare		23 (2.0%)																		
Unspecified healthcare plan		145 (12.6%)																		
Government employee healthcare plans		3 (0.3%)																		
Foreign Insurance		5 (0.4%)																		
In the last year, declined medical care due to cost.	1102		1094			**0.039**	981				0.240	1032				0.241	313				0.134
Yes		193 (17.5%)		118 (61.8%)	73 (38.2%)			65 (38.7%)	45 (26.8%)	58 (34.5%)			120 (68.2%)	22 (12.5%)	34 (19.3%)			16 (29.6%)	25 (46.3%)	13 (24.1%)	
No		909 (82.5%)		484 (53.6%)	419 (46.4%)			263 (32.3%)	258 (31.7%)	292 (35.9%)			590 (68.9%)	137 (16.0%)	129 (15.1%)			54 (20.8%)	158 (61.0%)	47 (18.1%)	
Needed health care services, but was unable to receive in the past 12 months.	1141		1134			**<0.001**	1012				**0.005**	1068				**0.017**	324				0.177
Yes		199 (17.4%)		152 (77.2%)	45 (22.8%)			54 (30.2%)	43 (24.0%)	82 (45.8%)			109 (59.9%)	36 (19.8%)	37 (20.3%)			11 (15.1%)	48 (65.8%)	14 (19.2%)	
No		942 (82.6%)		479 (51.1%)	458 (48.9%)			283 (34.0%)	273 (32.8%)	277 (33.3%)			626 (70.7%)	129 (14.6%)	131 (14.8%)			63 (25.1%)	140 (55.8%)	48 (19.15)	
Among those who utilized medical care in Mexico in the past 3 years, stopped due to fear of not being allowed back into the U.S.?	387		384			0.266	340				0.604	370				0.100	272				0.073
Yes		41 (10.6%)		30 (73.2%)	11 (26.8%)			14 (42.4%)	8 (24.2%)	11 (33.3%)			12 (29.3%)	10 (24.4%)	19 (46.3%)			5 (17.2%)	17 (58.6%)	7 (24.1%)	
No		346 (89.4%)		221 (64.4%)	122 (35.6%)			105 (34.2%)	94 (30.6%)	108 (35.2%)			79 (24.0%)	137 (41.6%)	113 (34.3%)			62 (25.5%)	159 (65.4%)	22 (9.1%)	
In the past 3 years, reasons for not seeking care in the U.S.																				
financial problems	1048		1045			**<0.001**	931				**<0.001**	996				**<0.001**	269				0.085
Yes		375 (35.8%)		294 (78.4%)	81 (21.6%)			85 (25.8%)	97 (29.5%)	147 (44.7%)			222 (62.5%)	58 (16.3%)	75 (21.1%)			23 (17.6%)	84 (64.1%)	24 (18.3%)	
No		673 (64.2%)		279 (41.6%)	391 (58.4%)			224 (37.2%)	203 (33.7%)	175 (29.1%)			498 (77.7%)	61 (9.5%)	82 (12.8%)			34 (24.6%)	70 (50.7%)	34 (24.6%)	
fear of deportation	864		860			**<0.001**	770				0.250	822				0.342	246				0.302
Yes		43 (5.0%)		39 (90.7%)	4 (9.3%)			13 (40.6%)	6 (18.8%)	13 (40.6%)			23 (59.0%)	8 (20.5%)	8 (20.5%)			6 (37.5%)	8 (50.0%)	2 (12.5%)	
No		821 (95.0%)		447 (54.7%)	370 (45.3%)			238 (32.2%)	241 (32.7%)	259 (35.1%)			546 (69.7%)	109 (13.9%)	128 (16.3%)			49 (21.3%)	129 (56.1%)	52 (22.6%)	

TABLE 1. Descriptive Statistics and Bivariate Associations with Measures for Access to Health Care in the U.S. and Mexico in the Past Years, among Hispanic Adults living in El Paso, TX. (cont.)

Table 1. Descriptive Statistics and Bivariate Associations with Measures for Access to Health Care in the U.S. and Mexico in the Past (3) Years, among Hispanic Adults living in El Paso, TX.																				
	N	Overall	Health Insurance				Time Since Last Medical Check-Up					Countries Where Medical Treatment was Sought					Accessed Medical Care in Mexico in Past 3 Years				
			n	No freq (%)	Yes freq (%)	p-value	n	< 6 mo. freq (%)	6 mo. - 1 yr. freq (%)	> 1 year freq (%)	p-value	n	U.S. freq (%)	Mexico freq (%)	Both freq (%)	p-value	n	Often freq (%)	Sometimes freq (%)	Never freq (%)	p-value
UTILIZATION OF HEALTH CARE SERVICES																				
Time Since Last Medical Check-Up	1020		1015			**<0.001**						962				**0.022**	280				0.238
< 6mo.		339 (33.2%)		141 (41.7%)	197 (58.3%)								240 (73.2%)	34 (10.4%)	54 (16.5%)			18 (21.2%)	50 (58.8%)	17 (20.0%)	
6 mo. – 1 yr.		319 (31.3%)		140 (44.0%)	178 (56.0%)								223 (71.7%)	44 (14.1%)	44 (14.1%)			25 (29.4%)	48 (56.5%)	12 (14.1%)	
>1 year		362 (35.5%)		259 (72.1%)	100 (27.9%)								212 (65.6%)	63 (19.5%)	48 (14.9%)			21 (19.1%)	61 (55.5%)	28 (25.5%)	
Accessed Inpatient Services in Past 6 Months	1082		1076			0.721	960				0.842	1022				**0.001**	305				0.549
Yes		157 (14.5%)		88 (56.1%)	69 (43.9%)			50 (35.2%)	41 (28.9%)	51 (35.9%)			119 (80.4%)	8 (5.4%)	21 (14.2%)			9 (31.0%)	15 (51.7%)	5 (17.2%)	
No		925 (85.5%)		501 (54.5%)	418 (45.5%)			275 (33.6%)	256 (31.3%)	287 (35.1%)			590 (67.5%)	149 (17.0%)	135 (15.4%)			61 (22.1%)	164 (59.4%)	51 (18.5%)	
Among those who accessed Inpatient Services in Past 6 Months, which service?	157		157			**0.002**	142				**0.002**	148				0.091	29				**0.026**
Drug/Alcohol treatment center		47 (29.7%)		36 (76.6%)	11 (23.4%)			10 (23.3%)	10 (23.3%)	23 (53.5%)			38 (86.4%)	2 (4.5%)	4 (9.1%)			1 (16.7%)	5 (83.3%)	0 (0.0%)	
Psychiatric facility		7 (4.4%)		2 (28.6%)	5 (71.4%)			1 (14.3%)	3 (42.9%)	3 (42.9%)			6 (100.0%)	0 (0.0%)	0 (0.0%)			0 (0.0%)	0 (0.0%)	0 (0.0%)	
Jail/Prison/Half-way house		14 (8.9%)		10 (71.4%)	4 (28.6%)			2 (15.4%)	3 (23.1%)	8 (61.5%)			13 (100.0%)	0 (0.0%)	0 (0.0%)			0 (0.0%)	0 (0.0%)	0 (0.0%)	
Medical Hospital		83 (52.5%)		38 (45.8%)	45 (54.2%)			33 (44.6%)	25 (33.8%)	16 (21.6%)			58 (73.4%)	6 (7.6%)	15 (19.0%)			8 (38.1%)	10 (47.6%)	3 (14.3%)	
Other		6 (3.8%)		2 (33.3%)	4 (66.7%)			4 (80.0%)	0 (0.0%)	1 (20.0%)			4 (66.7%)	0 (0.0%)	2 (33.3%)			0 (0.0%)	0 (0.0%)	2 (100.0%)	
Countries Where Medical Treatment was Sought	1077		1072			**<0.001**	962				**0.022**						325				**<0.001**
U.S.		743 (69.0%)		345 (46.6%)	395 (53.4%)			240 (35.6%)	223 (33.0%)	212 (31.4%)											
Mexico		165 (15.3%)		138 (84.1%)	26 (15.9%)			34 (24.1%)	44 (31.2%)	63 (44.7%)								51 (31.3%)	98 (60.1%)	14 (8.6%)	
Both		169 (15.7%)		95 (56.5%)	73 (43.5%)			54 (37.0%)	44 (30.1%)	48 (32.9%)								23 (14.2%)	91 (56.2%)	48 (29.6%)	
Accessed Medical Care in Mexico in Past 3 Years	950		947			**<0.001**	842				0.508	915				**<0.001**					
Often		81 (8.5%)		56 (70.0%)	24 (30.0%)			21 (29.6%)	28 (39.4%)	22 (31.0%)			6 (7.5%)	51 (63.7%)	23 (28.7%)						
Sometimes		242 (25.5%)		162 (67.5%)	78 (32.5%)			74 (35.2%)	64 (30.5%)	72 (34.3%)			47 (19.9%)	98 (41.5%)	91 (38.6%)						
Never		627 (66.0%)		296 (47.2%)	331 (52.8%)			186 (33.2%)	167 (29.8%)	208 (37.1%)			537 (89.6%)	14 (2.3%)	48 (8.0%)						
Among those who utilized medical care in Mexico in the past 3 years, what were the reasons?	349		346			**0.005**	306				0.207	339				0.113	279				0.187
Trust Mexican doctor/clinic		110 (31.5%)		71 (65.1%)	38 (34.9%)			26 (26.5%)	36 (36.7%)	36 (36.7%)			12 (11.1%)	54 (50.0%)	42 (38.9%)			23 (24.5%)	60 (63.8%)	11 (11.7%)	
Cost		194 (55.6%)		143 (74.5%)	49 (25.5%)			55 (33.1%)	49 (29.5%)	62 (37.3%)			34 (17.7%)	84 (43.8%)	74 (38.5%)			39 (24.8%)	106 (67.5%)	12 (7.6%)	
Only familiar with Mexican health care		9 (2.6%)		5 (55.6%)	4 (44.4%)			3 (37.5%)	2 (25.0%)	3 (37.5%)			2 (22.2%)	6 (66.7%)	1 (11.1%)			0 (0.0%)	6 (85.7%)	1 (14.3%)	
Walk-in		14 (4.0%)		4 (28.6%)	10 (71.4%)			6 (42.9%)	4 (28.6%)	4 (28.6%)			6 (50.0%)	2 (16.7%)	4 (33.3%)			1 (20.0%)	2 (40.0%)	2 (40.0%)	
Service only available in Mexico health care		2 (0.6%)		2 (100.0%)	0 (0.0%)			2 (100.0%)	0 (0.0%)	0 (0.0%)			0 (0.0%)	1 (50.0%)	1 (50.0%)			1 (50.0%)	1 (50.0%)	0 (0.0%)	
Other		20 (5.7%)		11 (55.0%)	9 (45.0%)			8 (44.4%)	8 (44.4%)	2 (11.1%)			2 (12.5%)	7 (43.8%)	7 (43.8%)			6 (42.9%)	8 (57.1%)	0 (0.0%)	
Purchased pharmaceuticals in Mexico in the past 3 years	364		361			0.099	319				0.308	352				**<0.001**	283				**<0.001**
Often		128 (35.2%)		91 (71.7%)	36 (28.3%)			28 (25.7%)	36 (33.0%)	45 (41.3%)			11 (8.7%)	76 (60.3%)	39 (31.0%)			56 (48.7%)	56 (48.7%)	3 (2.6%)	
Sometimes		185 (50.8%)		123 (67.2%)	60 (32.8%)			58 (35.6%)	52 (31.9%)	53 (32.5%)			35 (19.6%)	70 (39.1%)	74 (41.3%)			12 (8.5%)	113 (80.1%)	16 (11.3%)	
Never		51 (14.0%)		28 (54.9%)	23 (45.1%)			19 (40.4%)	13 (27.7%)	15 (31.9%)			19 (40.4%)	11 (23.4%)	17 (36.2%)			4 (14.8%)	13 (48.1%)	10 (37.0%)	
Among those who purchased pharmaceuticals in Mexico in the past 3 years, it was due to:																					
cost	326		323			**0.001**	283				0.629	319				0.483	262				0.227
Yes		261 (80.1%)		189 (73.3%)	69 (26.7%)			69 (30.5%)	74 (32.7%)	83 (36.7%)			40 (15.6%)	117 (45.7%)	99 (38.7%)			51 (23.8%)	141 (65.9%)	22 (10.3%)	
No		65 (19.9%)		34 (52.3%)	31 (47.7%)			21 (36.8%)	18 (31.6%)	18 (31.6%)			13 (20.6%)	30 (47.6%)	20 (31.7%)			17 (35.4%)	28 (58.3%)	3 (6.3%)	
prescriptions not needed	326		323			**0.022**	283				0.147	319				0.387	262				0.185
Yes		23 (7.1%)		11 (47.8%)	12(52.2%)			2 (11.8%)	6 (35.3%)	9 (52.9%)			6 (27.3%)	8 (36.4%)	8 (36.4%)			5 (31.3%)	11 (68.8%)	0 (0.0%)	
No		303 (92.9%)		212 (70.7%)	88 (29.3%)			88 (33.1%)	86 (32.3%)	92 (34.6%)			47 (15.8%)	139 (46.8%)	111 (37.4%)			63 (25.6%)	158 (64.2%)	25 (10.2%)	
trust or familiarity with medications in Mexico	326		323			0.309	283				0.318	319				0.362	262				0.726
Yes		25 (7.7%)		15 (60.0%)	10 (40.0%)			9 (47.4%)	5 (26.3%)	5 (26.3%)			2 (8.0%)	14 (56.0%)	9 (36.0%)			7 (33.3%)	12 (57.1%)	2 (9.5%)	
No		301 (92.3%)		208 (69.8%)	90 (30.2%)			81 (30.7%)	87 (33.0%)	96 (36.4%)			51 (17.3%)	133 (45.2%)	110 (37.4%)			61 (25.3%)	157 (65.1%)	23 (9.5%)	
Among those who utilized medical care in the U.S., it was due to:																					
trust in U.S. doctor or clinic	650		648			**0.002**	580				0.467	631				**0.018**	87				0.303
Yes		295 (45.4%)		111 (37.6%)	184 (62.4%)			95 (36.4%)	93 (35.6%)	73 (28.0%)			257 (88.6%)	4 (1.4%)	29 (10.0%)			4 (12.5%)	16 (50.0%)	12 (37.5%)	
No		355 (54.6%)		175 (49.6%)	178 (50.4%)			120 (37.6%)	99 (31.0%)	100 (31.3%)			282 (82.7%)	18 (5.3%)	41 (12.0%)			12 (21.8%)	30 (54.5%)	13 (23.6%)	
cost	650		648			0.926	580				0.105	631				0.351	87				0.386
Yes		46 (7.1%)		20 (43.5%)	26 (56.5%)			18 (45.0%)	16 (40.0%)	6 (15.0%)			36 (80.0%)	1 (2.2%)	8 (17.8%)			3 (33.3%)	3 (33.3%)	3 (33.3%)	
No		604 (92.9%)		266 (44.2%)	336 (55.8%)			197 (36.5%)	176 (32.6%)	167 (30.9%)			503 (85.8%)	21 (3.6%)	62 (10.6%)			13 (16.7%)	43 (55.1%)	22 (28.2%)	
familiarity only with U.S. healthcare	650		648			0.703	580				0.582	631				**<0.001**	87				0.536
Yes		107 (16.5%)		45 (42.5%)	61 (57.5%)			30 (33.0%)	34 (37.4%)	27 (29.7%)			102 (97.1%)	1 (1.0%)	2 (1.9%)			0 (0.0%)	2 (66.7%)	1 (33.3%)	
No		543 (83.5%)		241 (44.5%)	301 (55.5%)			185 (37.8%)	158 (32.3%)	146 (29.9%)			437 (83.1%)	21 (4.0%)	68 (12.9%)			16 (19.0%)	44 (52.4%)	24 (28.6%)	
Among those who purchased pharmaceuticals in the U.S., it was due to:																					
cost	622		620			0.685	560				**0.001**	602				0.352	71				0.244
Yes		101 (16.2%)		41 (40.6%)	60 (59.4%)			48 (52.7%)	28 (30.8%)	15 (16.5%)			90 (91.8%)	2 (2.0%)	6 (6.1%)			2 (25.0%)	2 (25.0%)	4 (50.0%)	
No		521 (83.8%)		222 (42.8%)	297 (57.2%)			157 (33.5%)	154 (32.8%)	158 (33.7%)			438 (86.9%)	14 (2.8%)	52 (10.3%)			11 (17.5%)	35 (55.6%)	17 (27.0%)	
trust or familiarity with medications in U.S.	622		620			**0.015**	560				0.406	602				**<0.001**	71				0.321
Yes		198 (31.8%)		70 (35.4%)	128 (64.6%)			58 (33.0%)	63 (35.8%)	55 (31.3%)			184 (94.8%)	0 (0.0%)	10 (5.2%)			1 (10.0%)	4 (40.0%)	5 (50.0%)	
No		424 (68.2%)		193 (45.7%)	229 (54.3%)			147 (38.3%)	119 (31.0%)	118 (30.7%)			344 (84.3%)	16 (3.9%)	48 (11.8%)			12 (19.7%)	33 (54.1%)	16 (26.2%)	
advice from doctor or pharmacist	622		620			0.773	560				0.353	602				0.495	71				0.403
Yes		90 (14.5%)		39 (43.8%)	50 (56.2%)			28 (33.3%)	33 (39.3%)	23 (27.4%)			78 (87.6%)	1 (1.1%)	10 (11.2%)			1 (9.1%)	5 (45.5%)	5 (45.5%)	
No		532 (85.5%)		224 (42.2%)	307 (57.8%)			177 (37.2%)	149 (31.3%)	150 (31.5%)			450 (87.7%)	15 (2.9%)	48 (9.4%)			12 (20.0%)	32 (53.3%)	16 (26.7%)	
CROSS-BORDER MOBILITY																					
Ever go to Cd. Juarez	1123		1117			**<0.001**	998				0.191	1056				**<0.001**	318				**<0.001**
Yes		448 (39.9%)		273 (61.5%)	171 (38.5%)			138 (34.7%)	134 (33.7%)	126 (31.7%)			158 (36.5%)	149 (34.4%)	126 (29.1%)			68 (25.2%)	166 (61.5%)	36 (13.3%)	
No		675 (60.1%)		342 (50.8%)	331 (49.2%)			200 (33.3%)	178 (29.7%)	222 (37.0%)			571 (91.7%)	13 (2.1%)	39 (6.3%)			5 (10.4%)	19 (39.6%)	24 (50.0%)	
Frequency of visits to Cd. Juarez	427		423			**0.002**	378				0.394	412				**<0.001**	261				0.453
Weekly		168 (39.3%)		119 (71.3%)	48 (28.7%)			50 (35.0%)	42 (29.4%)	51 (35.7%)			36 (22.1%)	79 (48.5%)	48 (29.4%)			34 (27.4%)	74 (59.7%)	16 (12.9%)	
Monthly		119 (27.9%)		76 (64.4%)	42 (35.6%)			41 (39.0%)	37 (35.2%)	27 (25.7%)			38 (32.8%)	41 (35.3%)	37 (31.9%)			22 (28.6%)	47 (61.0%)	8 (10.4%)	
Yearly		140 (32.8%)		71 (51.4%)	67 (48.6%)			40 (30.8%)	45 (34.6%)	45 (34.6%)			73 (54.9%)	24 (18.0%)	36 (27.1%)			10 (16.7%)	40 (66.7%)	10 (16.7%)	
Among those who cross the border to Cd. Juarez, have fear of detainment by U.S. Immigration	437		432			0.075	387				0.277	415				0.757	245				0.573
Yes		32 (7.3%)		24 (75.0%)	8 (25.0%)			15 (51.7%)	7 (24.1%)	7 (24.1%)			11 (35.5%)	12 (38.7%)	8 (25.8%)			7 (35.0%)	10 (50.0%)	3 (15.0%)	
No		405 (92.7%)		236 (59.0%)	164 (41.0%)			132 (36.9%)	105 (29.3%)	121 (33.8%)			155 (40.4%)	124 (32.3%)	105 (27.3%)			55 (24.4%)	137 (60.9%)	33 (14.7%)	
Among those who no longer cross the border to Cd. Juarez, it was due to:																					
the "drug war"	731		728			**0.008**	660				0.352	692				0.078	167				0.222
Yes		345 (47.2%)		157 (45.8%)	186 (54.2%)			119 (37.8%)	92 (29.2%)	104 (33.0%)			262 (78.7%)	27 (8.1%)	44 (13.2%)			8 (11.3%)	43 (60.6%)	20 (28.2%)	
No		386 (52.8%)		214 (55.6%)	171 (44.4%)			112 (32.5%)	107 (31.0%)	126 (36.5%)			260 (72.4%)	47 (13.1%)	52 (14.5%)			16 (16.7%)	63 (65.6%)	17 (17.7%)	
safety	731		728			0.467	660				0.171	692				0.571	167				0.784
Yes		126 (17.2%)		60 (48.0%)	65 (52.0%)			35 (30.4%)	43 (37.4%)	37 (32.2%)			92 (77.3%)	14 (11.8%)	13 (10.9%)			4 (15.4%)	15 (57.7%)	7 (26.9%)	
No		605 (82.8%)		311 (51.6%)	292 (48.4%)			196 (36.0%)	156 (28.6%)	193 (35.4%)			430 (75.0%)	60 (10.5%)	83 (14.5%)			20 (14.2%)	91 (64.5%)	30 (21.3%)	
the law	731		728			**<0.001**	660				0.347	692				0.430	167				0.287
Yes		29 (4.0%)		27 (93.15)	2 (6.9%)			4 (22.2%)	5 (27.8%)	9 (50.0%)			16 (64.0%)	4 (16.0%)	5 (20.0%)			3 (33.3%)	5 (55.6%)	1 (11.1%)	
No		702 (96.0%)		344 (49.2%)	355 (50.8%)			227 (35.4%)	194 (30.2%)	221 (34.4%)			506 (75.9%)	70 (10.5%)	91 (13.6%)			21 (13.3%)	101 (63.9%)	36 (22.8%)	

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APPENDIX I.

THE UNIVERSITY OF TEXAS AT EL PASO
Office of the Vice President for Research and Sponsored Projects
Institutional Review Board
El Paso, Texas 79968-0587
phone: 915 747-8841 fax: 915 747-5931

FWA No: 00001224

DATE:	February 21, 2013
TO:	Ernesto Castaneda, PhD
FROM:	University of Texas at El Paso IRB
STUDY TITLE:	[271104-3] Social Determinants of Physical and Mental Health of Migrant and Transient Populations: Health Disparities amongst Hispanics in El Paso
IRB REFERENCE #:	271104-3
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
APPROVAL DATE:	February 21, 2013
EXPIRATION DATE:	October 7, 2013
REVIEW TYPE:	Expedited Review

Thank you for your submission of Amendment/Modification materials for this research study. University of Texas at El Paso IRB has APPROVED your submission. This approval is based on an appropriate risk/ benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This study has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years after termination of the project.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

If you have any questions, please contact Athena Fester at (915) 747-8841 or afester@utep.edu. Please include your study title and reference number in all correspondence with this office.

cc:

APPENDIX II.

THE UNIVERSITY OF TEXAS AT EL PASO
Office of the Vice President for Research and Sponsored Projects
Institutional Review Board
El Paso, Texas 79968-0587
phone: 915 747-8841 fax: 915 747-5931

FWA No: 00001224

DATE:	August 26, 2013
TO:	Krystal Martinez, BSN
FROM:	University of Texas at El Paso IRB
STUDY TITLE:	[502363-1] Cross-Border Mobility, Access to Healthcare through Health Coverage, and Other Correlates for Utilization of Healthcare Services along the U.S.-Mexico Border
IRB REFERENCE #:	502363-1
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	August 26, 2013

Thank you for your submission of New Project materials for this research study. University of Texas at El Paso IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulation 45 CFR 46.101(b)(4).

Exempt protocols do not need to be renewed. Please note that it is the Principal Investigator's responsibility to resubmit the proposal for review if there are any modifications made to the originally submitted proposal. This review is required in order to determine if "Exemption" status remains.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact Athena Fester at (915) 747-8841 or afester@utep.edu. Please include your study title and reference number in all correspondence with this office.

cc:

CURRICULUM VITA

Krystal Martinez was born in El Paso, Texas. Graduated from the University of Texas at El Paso, with a bachelors of science in nursing with Cum Laude Honors in May of 2006. Her clinical experience as a registered nurse has included the following full time positions: labor and delivery at R.E. Thomason Hospital, geriatric care at Bienvivir Senior Health Center, diabetes education at the Del Sol Diabetes Treatment Center. Currently she is employed as a clinical educator in the training and development department at Del Sol Medical Center, focused on nurse residency program development and staff orientation. She was accepted into the graduate program for Public Health in the fall of 2010 at the University of Texas at El Paso. In summer of 2011, she completed a summer internship with the Pan American Health Organization (PAHO) at the United States-Mexico Border office. Through her experience as a research assistant with professor Ernesto Castaneda, Ph.D. from the sociology department at the University of Texas at El Paso, she performed literature reviews, survey data entry/cleaning, and analysis using SPSS Statistics v21.0. She was recently acknowledged in the publication, "Poverty and Health," by Dr. Ernesto Castaneda by assisting on a section that discussed, *Access to Health Care* along the U.S.-Mexico Border. Also, in fall of 2013 she participated in the graduate expo at the University of Texas at El Paso, by presenting her poster on Cross-Border Mobility, Access to Healthcare through Health Coverage, and Other Correlates for Utilization of Healthcare Services Along the U.S.-Mexico Border.

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