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Factors That Influence Whether Mexican Americans With Depression Seek Treatment

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Abstract

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by

Irene Rodriguez

MA, University of Texas at El Paso, 1990

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Mexican Americans, the largest Hispanic subgroup in the United States, tend to underuse mental health services. Grounded in Andersen's behavioral model of health services use, the purpose of this nonexperimental study was to examine the likelihood of birth country, education, income, and insurance predicting which respondents would report seeking mental health services to treat depression. The Mini International Neuropsychiatric Interview was used to diagnose depression in 203 Mexican Americans whose data was archived from the primary study. This archived data was analyzed within this study. The results of the 2 x 2 chi-square tests of independence indicated a significant association between a person's birth country and the likelihood that a person will seek mental health treatment, with U.S.-born participants more likely to seek mental health treatment than foreign-born participants. There were no significant bivariate associations found between education, income, or insurance and seeking mental health treatment. The full model containing the 4 independent variables was statistically significant per the results of the binary logistic regression analysis. This finding indicates that the model reliably distinguished between respondents who reported seeking and not seeking mental health treatment. The results of the binary logistic regression analysis indicated education was the only independent variable that made a uniquely significant contribution to the model, with participants with 12 years or more of education more likely to seek mental health treatment. The implications for positive social change include the potential to provide communities and health care providers knowledge of the factors that influence whether Mexican Americans with depression access mental health.

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Dedication

I dedicate this dissertation to the Lord Jesus Christ, as all things are possible when you believe. I also dedicate this dissertation in memory of my beloved parents, Jose Manuel and Hortencia C. Rodriguez.

Acknowledgments

I would like to thank Dr. Heisser-Metoyer, my chair, and Dr. Gallaher, my committee member, for their guidance throughout the process. Special thanks to Dr. M. Escamilla for his continued support. Thanks to my family for their encouragement and love. Thanks to my dear buddy Shorrelle for her encouragement across the miles.

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Chapter 1: Introduction to the Study

Depression is a primary cause of disability for Americans (Kristifoco, Stewart, & Vega, 2007), and the United States incurs costs between $30 to $50 billion in lost productivity and direct medical care each year (Robinson, Geske, Prest, & Barnacle, 2005). Disparities exist between the quality of mental health care offered to the general U.S. population and that offered to racial and ethnic minorities (Kristifoco et al., 2007). These disparities are highest among Hispanics, who constitute the largest minority group in the United States (Lewis-Fernandez, Das, Alfonso, Weisman, & Olfson, 2005). Hispanics receive inadequate mental health treatment for major depression, which is common among Hispanic patients treated in primary care (Lewis- Fernandez et al., 2005). Researchers have found that major depression is underrepresented and underdiagnosed among Hispanics (Kristifoco et al., 2007; Lewis-Fernandez et al., 2005).

Hispanics are heterogeneous, and differences among the subgroups need to be considered when evaluating mental health needs (Lewis-Fernandez et al., 2005). Mexican Americans are the largest subgroup of Hispanics in the United States (Lewis- Fernandez et al., 2005), and they tend to underuse mental health services (Guarnaccia & Martinez, 2002). Mexican Americans born in the United States are at a greater risk for developing major depression than are Mexican immigrants. Data from an epidemiologic study conducted in 1987 indicated that the rate of major depression was lower for Mexican immigrants than for U.S.-born Mexican Americans (Lewis-Fernandez et al., 2005). Research studies related to the mental health of Mexican Americans are sparse (Delgado et al., 2006), and, within the literature I reviewed, there was a dearth of current studies

related to the service utilization of treatment for mental health by Mexican Americans. Researchers who studied the quality of care and use of mental health services of the Hispanic population made generalizations and inferences assuming homogeneity and did not consider internal variability among subgroups (Perez, Ang, & Vega, 2009). According to Vega et al. (2007), deficits in the inclusion of Hispanics in mental health clinical studies exist.

I conducted this research study to address this gap in knowledge by focusing on the impact that birth country, education, income, and insurance have on whether Mexican Americans with depression will seek treatment. My research may promote social change by providing mental health providers at the local level data about the lack of mental health resources available to the Mexican American population. These conversations may result in subsequent community advocacy to address this issue.

In this chapter, I present the rationale and scope of the study. I provide the background of the study; the problem statement; the research questions and hypotheses; the conceptual framework; the research method; and the assumptions, delimitations, and limitations of the study. Before concluding the chapter, I also consider the significance of the study and its implications for positive social change.

Background

Mexicans are the Hispanic subgroup that has resided in the United States the longest. After the Mexican War (1846-1848), the United States took over territories that spanned from Texas to California, and many Mexican citizens chose to stay in the United States. The Mexican Revolution (1910-1917) created economic, social, and political

instability in Mexico, which contributed to an increase in the Mexican population in the United States. The continued flow of migration has been affected by subsequent economic hardships in Mexico and the need for laborers in the United States (U.S. Department of Health and Human Services, 2001, p. 132).

More than half of the entire U.S. population growth during between 2000 and 2010 (27.3 million) was due to an increase in the Hispanic population (15.2million), and people of Mexican origin accounted for three-quarters of this Hispanic population growth (U.S. Census Bureau, 2011). In 2010, Mexican Americans represented 63% of the Hispanic population in the United States. From 2000 to 2010, the percentage of people of Mexican origin increased by 54%, with a numeric change of 11.2 million from 20.6 million in 2000 to 31.8 million in 2010 (U.S. Census Bureau, 2011). This trend indicates the importance of access to mental health services for Mexican Americans.

Data on the number of Mexican Americans in the United States is needed by both public and private organizations to identify areas of particular need to plan and implement mental health programs (Gonzalez et al., 2010). Research by Gonzalez et al. (2010) indicates that it is vital to desegregate data in order to pinpoint the type of depression treatment being used by a particular subgroup. In a national study conducted throughout 48 states from 2001 to 2003 and using data from Collaborative Psychiatric Epidemiology Surveys (CPES), the authors determined the prevalence of depression among different ethnic and racial groups (Gonzalez et al., 2010). The research findings suggested that Mexican Americans were not likely to receive treatment for depression

(Gonzalez et al., 2010). This finding is reinforced by Lewis-Fernandez et al.'s (2005) finding that Mexican Americans underuse mental health services.

A question asked by some researchers is where Mexican Americans are going for treatment of their depression. One group of researchers found that Mexican Americans with psychiatric disorders were likely to seek treatment from general practitioners, priests, chiropractors, counselors, folk healers, spiritualists, and psychics (Vega, Kolody, & Aguilar-Gaxiola, 2001; Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999). Also, Vega et al. (2007) note that deficits existed in the inclusion of Hispanics in mental health clinical studies. The lack of current studies focusing on Mexican Americans and their utilization of services for depression indicates a gap within the literature.

The available research about the treatment sought by Mexican Americans for mental disorders indicates that education, income, insurance, and birth country are factors that may affect where they seek treatment for depression. Research by Valencia-Garcia et al. (2012) into high school graduation rates indicated Mexican Americans faced economic, language, and cultural barriers to educational achievement that caused high dropout rates from high school and deficiencies in college achievement. The average educational level of Mexican Americans decreased from 2000 to 2010. Data from the 2000 Census Bureau showed that, among people over the age of 25, Mexican Americans had a 50% high school graduation rate and a postsecondary graduation rate of 7%. U.S. Census data collected in 2010 indicated that 30.8% of Mexican Americans 25 years and over were high school graduates. Within this age category, 19.5% had some college or an associate's degree, 7.9% had a bachelor's degree, and 2.6% had an advanced degree

(U.S. Census Bureau, 2013). The difference of -19.2% in the high school graduation rate of Mexican Americans in the 2000 Census and the 2010 Census is significant. The Census data shows that during this time period Mexican Americans over the age of 18 experienced low college graduation rates, high unemployment rates, and had yearly incomes of less than $30,000. The data suggest that Hispanics' level of education is associated with employment and income.

However, higher average levels of education do not necessarily result in increases in income and employment for Mexican Americans. Descriptive sociodemographic characteristics of Mexican Americans based on the 2008-2010 American Community Surveys (N = 780,939) indicated the poverty rate for adults 18 years and older was 20.65% (Singh & Lin, 2013). The per capita income for adults 18 years and older was $22,171, with an unemployment rate of 10.25%. But during this period college graduation rates for adults age 25 and older was 9.25%, which was an increase from the rate in 2000 (Singh & Lin, 2013). Significant differences are noted from the 2000 data to the 2010 data on Mexican Americans: (a) college graduation rates increased from 7% (2000) to 9.5% (2008-2010), (b) median income decreased from $27,883 (2000) to $22,171 (2008-2010), and (c) the unemployment rate increased from 7% (2000) to 10.25% (2008-2010). The unemployment rate was up to 10.25% based on data from 2008-2010, from the American Community Survey for individuals 18 years and older (Singh & Lin, 2013).

The median family income of Mexican Americans in 2000 was $27,883, and the unemployment rates of individuals 16 and older was 7% (U.S. Census Bureau, 2001). Data from the U.S. Census Bureau Current Population Survey 2016 found the median income for Hispanics was $45,148 in 2015. The data from the Census Bureau illustrates that the educational status and economic status of Mexican Americans influence each other in the long term (U.S. Department of Health & Human Services, 2001, p. 132). Lower levels of economic and educational resources may have made Mexican American children and adults susceptible to mental health problems (U.S. Department of Health & Human Services, 2001, p. 132).

Many Mexican Americans also lack the resource of health insurance. The 2000 Census data indicated that Hispanics, inclusive of Mexican Americans, made up 12% of the U.S. population. Within this percentage, 37% were uninsured (U.S. Department of Health & Human Services, 2001, p. 141). Health insurance may be affected by citizenship or by immigration status (U.S. Department of Health & Human Services, 2001, p. 142). Data from the 2010 Census indicated 31.9% of Mexican Americans were uninsured. Within the group of Mexican Americans under 18 years of age, 15.8% were uninsured, whereas 43.6% of Mexican Americans within the 18-64 age group were uninsured and 6.8% of Mexican Americans 65 years and over were uninsured (U.S. Census Bureau, 2013) The percentage of uninsured Hispanics inclusive of Mexican Americans decreased from 37% in 2000 to 31.9% uninsured Mexican Americans in 2010 (U.S. Census Bureau, 2013). The highest rate of uninsured was within the 18-64 age

group. There was a difference of 5.1% over a 12-year period for Mexican Americans within the context of Hispanics in the 2000 data and as a subgroup in the 2010 data.

My research review indicated there is a gap in knowledge on how birth country, education, income, and insurance impact if and where Mexican Americans seek treatment for depression, which results from a deficiency of current clinical studies of services used based on desegregated data.

The purpose of this study was to examine and analyze archival data on Mexican Americans with depression to determine if birth country, education, income, and insurance were predictors to seeking treatment. Theorizing that a higher education level would be associated with a higher income, I made the assumption that a person's educational level would influence the amount of income generated. Income impacts the affordability and availability of insurance for individuals and influences the individual to seek treatment for mental health (Bledsoe, 2008).

This study may contribute to the scholarly literature on Mexican Americans and mental health treatment for depression by yielding data about the types of treatment selected by Mexican Americans as well as the characteristics that predict which Mexican Americans will or will not seek treatment. I used Andersen's (1995) behavioral model of health services as the framework for reviewing and analyzing whether birth country, education, income, or insurance influenced where Mexican Americans with depression received mental health treatment. Data from the study may be beneficial for policy reform focused on the mental health disparities faced by Mexican Americans.

Problem Statement

There is evidence illustrating the underrepresentation of Hispanics in clinical studies related to mental health (see Vega et al., 2007). Yet, many of these studies are dated. Within the literature review I conducted, the dearth of current studies related to the service utilization of treatment for mental health by Mexican Americans was evident. Studies pertinent to the service utilization of Mexican Americans were scarce, and the majority of those studies were more than five years old. A study conducted by Vega et al. (1999) indicated that Mexican Americans with psychiatric disorders were likely to receive their mental care from general medical providers. Another study conducted by Vega et al. (2001) indicated that Mexican Americans with psychiatric disorders sought help from priests, chiropractors, counselors, folk healers, spiritualists, and psychics. However, the data collected for these studies is almost twenty years old, and although Mexican Americans were distinguished from other Hispanic Americans in these studies, there was no attempt to explore how the different backgrounds of the subjects of the studies might have influenced their choices. The lack of current studies focusing on Mexican Americans and their utilization of services for depression indicates a deficiency within the literature.

The U.S. Hispanic population is expected to double between 2000 and 2050 (Mead et al., 2008). This growth is significant because of the presence of differences in income and education based on race and ethnicity in the United States (Mead et al., 2008). Hispanics in the United States are twice as likely to live in poverty as Whites and Asians (Mead et al., 2008). Also, the educational level of Hispanics tends to be lower

than that of Whites and Asians (Mead et al., 2008). An association exists between use of preventive services and higher educational levels, according to research findings (Mead et al., 2008). In my literature review for this study, I found few clinical studies related to birth country, education, income, and insurance as predictors of whether Mexican Americans with depression would seek treatment. I addressed this gap in the literature by examining and analyzing archival data on Mexican Americans with depression and the influence birth country, education, income, and insurance have on the likelihood of their seeking treatment.

Purpose of the Study

The purpose of this quantitative study was to examine the effects of birth country, education, income, and insurance on the likelihood that Mexican Americans would seek treatment for depression. The independent variables were birth country, education, income, and insurance. The dependent variable was mental health treatment (yes or no). I designed the study to test the hypotheses and answer the research questions that are described in the following section. I conducted a secondary analysis of data collected at one research site located in the West Texas Border region as part of a genetics of bipolar and related disorders study conducted at the Center of Emphasis in Neurosciences at the Texas Tech University Health Sciences Center (TTUHSC).

Research Questions and Hypotheses

The research questions and hypotheses were as follows:

RQ1. Is there a statistically significant association between birth country (U.S.-born or foreign-born) and seeking mental health treatment (yes or no) among Mexican Americans with depression?

H1. There is no statistically significant association between birth country (U.S.-born or foreign-born) and seeking mental health treatment among Mexican Americans with depression.

H1. There is a statistically significant association between birth country (U.S.-born or foreign-born) and seeking mental health treatment among Mexican Americans with depression.

RQ2. Is there a statistically significant association between education (< 12 years or ≥ 12 years) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

H2. There is no statistically significant association between education (< 12 years or ≥ 12 years) and reporting seeking mental health treatment among Mexican Americans with depression.

H2. There is a statistically significant association between education (< 12 years or ≥ 12 years) and reporting seeking mental health treatment among Mexican Americans with depression.

RQ3. Is there a statistically significant association between income (< $15K/year or ≥ $15K/year) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

H3. There is no statistically significant association between income (< $15K/year or ≥ $15K/year) and reporting seeking mental health treatment among Mexican Americans with depression.

H3. There is a statistically significant association between income (< $15K/year or ≥ $15K/year) and reporting seeking mental health treatment among Mexican Americans with depression.

RQ4. Is there a statistically significant association between insurance (yes or no) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

H4. There is no statistically significant association between insurance and reporting seeking mental health treatment among Mexican Americans with depression.

H4. There is a statistically significant association between insurance and reporting seeking mental health treatment among Mexican Americans with depression.

RQ5. What is the likelihood that birth country, education, income, and insurance predict seeking mental health treatment among Mexican Americans with depression?

H5. It is not likely that birth country, education, income, and insurance will predict seeking mental health treatment among Mexican Americans with depression.

H5. It is likely that birth country, education, income, and insurance will predict seeking mental health treatment among Mexican Americans with depression.

Conceptual Framework for the Study

I examined the influence of birth country, education, income, and insurance on the decision to seek treatment by Mexican Americans with depression. I used the Andersen (1995) behavioral model of health services use as the framework to investigate the influence of birth country, education, income, and insurance on the treatment preferences of Mexican Americans with depression. During the late 1960s, Andersen constructed the behavioral model to determine why families used health services, define and measure access to health, and to encourage equitable access to health care. The model suggests that people may use health services based on predisposing factors, enabling resources, and need (Andersen, 1995). Predisposing characteristics include demographics, social structure, and health beliefs (Andersen, 1995). Enabling resources include community and personal resources (Andersen, 1995). The need for treatment is based on the perceived need of the individual (Andersen, 199,5). Predisposing factors, enabling resources, and perceived need may affect the use of services. (Andersen, 1995).

Demographic factors include age and gender. *Social structure* refers to factors that may influence the community status of individuals and their abilities to cope with

problems and use resources to address the presenting problem(s). Social structure is often measured by education, occupation, and ethnicity. Within this study, education, a predisposing characteristic and a part of the social structure, was one of the four independent variables of the study. Birth country, a demographic factor and predisposing characteristic, was one of the four independent variables of the study. Enabling resources include the health personnel and facilities available to the individual as well as the means and ability to obtain and use the services (Andersen,1995). Income and insurance, enabling resources, were the two other independent variables of the study. I was investigating whether the dependent variable, seeking mental health treatment (yes or no), was influenced by birth country education, income, and/or insurance, the independent variables. The use of mental health services and selection of the type of treatment for depression by Mexican Americans might have been influenced by birth country and education, predisposing characteristics, and by income and insurance, enabling resources.

Nature of the Study

In this quantitative study I used a sample of convenience from an epidemiological study conducted in El Paso County (West Texas). This epidemiological study was conducted to gather data on mental and medical illnesses in the region. The participants in the study were randomly selected in the county and are representative of that region. The participants completed English/Spanish assessments and were interviewed by trained personnel. The study group may not be completely representative of Mexican Americans throughout Texas because all participants were from one region. Within this population,

some of the participants had problems with depression or other mental health disorders. The participants I selected as part of the sample of convenience were those identified as having problems with depression who self-identified as Mexican American. I used this data to examine the influence of birth country, education, income, and insurance on the utilization of services by Mexican Americans with depression. In this study the independent variables are birth country, education, income, and insurance, and whether to seek treatment (yes or no) are the binary dependent variables. I examined and analyzed the data using multiple regression to assess associations between the independent variables and the dependent variables.

I was granted permission to use an archived dataset from a health science center in El Paso, Texas. To protect the privacy of the participants and to comply with the Health Insurance Portability and Accountability Act of 1996, the archival data did not contain participants' identifiable information.

Definitions

Curandero: A folk medicine practitioner (Higginbotham, Treviño, & Ray, 1990).

DSM-5 definition of Depression: "The essential feature of a major depressive episode is a period of at least two weeks during which there is either depressed mood or the loss of interest or pleasure in nearly all activities" (American Psychiatric Association, 2013).

Education: Within this study, this term refers to a person's education level measured in years. A high school diploma equals 12 years of school. A college education is 13 years of school or more.

Herbalista: A folk medicine practitioner (Higginbotham et al., 1990).

Hispanics: This term refers to members of the following ethnic subgroups: Mexican, Cuban, Puerto Rican, and other Hispanics, which includes Spaniard, Dominican, South American, and Central American (U.S. Census Bureau, 2011). Based on the 2010 Census, the states with the highest proportion of Hispanics are New Mexico, California, Texas, Arizona, Nevada, Colorado, Florida, New York, New Jersey, and Illinois (U.S. Census Bureau, 2011).

Income: Within this study, this term refers to the annual income, in dollars, earned by an individual.

Insurance: Within this study, this term refers to health insurance provided by an individual's employer or by the state or obtained via personal health insurance.

Assumptions

Testing Andersen's behavioral model with retrospective data to determine how birth country, education, income, and insurance might affect whether Mexican Americans with depression seek treatment within one border community was based on the study's core assumptions:

1. The use of secondary data was an adequate method of data collection for this study.
2. The archival data was from one site in Texas and was sufficient to determine how birth country, education, income, and insurance affect whether Mexican Americans with depression seek treatment.

3. The findings of this study can be generalized to the Mexican American population outside of this one county.
4. A diagnosis of depression was a reliable way of choosing study participants.
5. Birth country, education, income, and insurance were appropriate as factors that may be associated with the treatment preferences selected by Mexican Americans with depression.

Scope and Delimitations

The purpose of the study was to investigate how birth country, education, income, and insurance affect whether Mexican Americans with depression seek treatment. For this study I used archival data from an epidemiologic study on the genetics of bipolar and related disorders in one border community in Texas. The study boundaries included a population of participants who identified themselves as Mexican Americans, were 18 years of age or older, were diagnosed with depression, were residents of Texas, and were willing to participate. Mexican Americans tend to underuse psychological services (Guarnaccia & Martinez, 2002). Findings from this study identified the segments of this population who received or who did not receive treatment as well as treatment preferences within one region in Texas. The results demonstrated how birth country, education, income, and insurance influenced the use of mental health treatment by Mexican Americans.

Limitations

One limitation of the study is its reliance on secondary data from one database at a health center, which may not provide an accurate picture of the selection preferences of Mexican Americans on their treatment for depression.

Another limitation is that this one city, El Paso, Texas, may not be representative of the Mexican American population in the United States. I did not include individuals who did not reside in Texas, were below the age of 17 or over 100, or were unwilling to participate in this retrospective study.

Significance

Mexican Americans are the largest Hispanic subgroup in the United States (Lewis-Fernandez, 2005), and they tend to underuse mental health services (Guarnaccia & Martinez, 2002). Authors of existing studies that explored the quality of care and use of mental health services by the Hispanic population made generalizations and inferences assuming homogeneity of Hispanics without consideration of the internal variability among the subgroups (Perez et al., 2009). Research literature related to the mental health of Mexican Americans is sparse (Delgado et al., 2006), and deficits in the inclusion of Mexican Americans in mental health clinical studies exist (Vega et al., 2007). This study helps to bridge this gap in knowledge because I considered the internal variability of Hispanics when exploring on the impact birth country, education, income, and insurance may have on the selection and use of treatment by Mexican Americans with depression. In this study I identify: (a) why Mexican Americans were not receiving treatment for depression, (b) where they went for treatment, and (c) how birth country, education,

income, and insurance influenced their treatment choices. The information may impact social change by providing facts for health professionals to address. It is my hope that the realization that mental health resources are lacking within the Mexican American population will result in an upsurge of discussions that cause communities to advocate for mental health services access.

Summary

Research (Lewis-Fernandez, 2005) has indicated Hispanics in the United States, the largest minority, are faced with significant disparities in health care and are not receiving adequate mental health care for depression (Lewis-Fernandez, 2005). Hispanics are heterogeneous, and differences among the subgroups need to be considered when evaluating mental health needs (Lewis-Fernandez, 2005). Existing studies focused on the quality of care and use of mental health services of Hispanics. Researchers made generalizations and inferences assuming homogeneity without regard for the internal variability among subgroups (Perez et al., 2009). The consideration of internal variability of Hispanics is imperative as Mexican Americans underuse mental health services (Guarnaccia & Martinez, 2002; Lewis-Fernandez, 2005). The review of literature of utilization of mental health services by Mexican Americans revealed a dearth of information. Archival data for this study is part of an epidemiologic study being conducted on the genetics of bipolar and related disorders by the research team at a health science center in El Paso, Texas. Andersen's behavioral health model is the framework that I will use to investigate if associations exist between any of the independent variables of birth country, education, income, and insurance and the dependent variable, whether or

not to seek treatment. In this study I identify: (a) why Mexican Americans are not receiving treatment for depression, (b) where they are going for treatment, and (c) how birth country, education, income, and insurance influence their decisions to seek treatment.This study may effect social change, as its results address the causes of mental health disparities faced by the Mexican American population and encourage policy formulation.

Chapter 2 includes a literature review of mental health studies related to Mexican Americans.

Chapter 2: Literature Review

Mexican Americans born in the United States tend to underuse mental health services and are at greater risk for developing major depression than Mexican immigrants (Guarnaccia & Martinez, 2002; Lewis-Fernandez et al., 2005). Data from an epidemiologic study conducted in 1987 indicated that the rate of major depression was lower for Mexican immigrants than for U.S.-born Mexican Americans (Lewis-Fernandez et al., 2005). Research studies related to the mental health of Mexican Americans have been sparse (Delgado et al., 2006), and, within the literature I reviewed, the dearth of current studies related to the service utilization of treatment for mental health by Mexican Americans was evident. Researchers who focused on the quality of care and use of mental health services of the Hispanic population made generalization and inferences, which included assuming homogeneity, and did not consider internal variability among subgroups (Perez, Ang, & Vega, 2009).

In conducting this research study, I sought to bridge this gap in knowledge by focusing on the impact birth country, education, income, and insurance have on the use of mental health services by Mexican Americans with depression as a subgroup of Hispanics. The research may promote social change by fostering discussions among mental health providers and community leaders about the lack of mental health resources within the Mexican American population. Such conversations may result in subsequent community advocacy to address this issue.

The purpose of this literature review is to establish a connection between previous relevant research and the current study. In the literature review, I discuss previous

research studies related to depression and Mexican Americans, services used by Mexican Americans to treat mental health, and the Andersen (1995) behavioral health model to examine how birth country, education, income, and insurance may influence the likelihood of Mexican Americans to seek mental health treatment.

Literature Search Strategy

I began reviewing literature in November 2012. I found peer-reviewed academic literature in multiple databases using Walden Library and Texas Tech University Library. These databases included Academic Search Complete/Premier, CINAHL, EBSCOhost, Health and Medical Complete, MEDLINE, PubMed, PsycARTICLES, PsycEXTRA, PsycINFO, PsychiatryOnline, SAGE Premier, and SocINDEX. Literature searches began with use of the principal search terms and phrases *depression and Hispanics*, *utilization of mental health services by Mexican Americans, income and Hispanics, education and Hispanics,* and *insurance and Hispanics*. Other key terms used alone and in combination included the following: *Hispanics, Mexican Americans, depression, utilization of mental health services, income and Hispanics, education and Hispanics, insurance and Hispanics*, and *acculturation and mental health*. In addition to the databases listed above, I used Google Scholar and the National Institute of Mental Health (NIMH) database to locate specific articles.

Current scholarly literature on Mexican Americans is scarce. Torres and Rollock (2007) found that most literature on Mexican Americans reported studies of Hispanics that lacked consideration of intragroup variability. Research themes that emerged from my literature review on Mexican Americans and depression included the following:

Mexican Americans underuse mental health services, Mexican Americans born in the United States are more prone to developing depression than Mexican immigrants, acculturation may affect the development of depression, and the Andersen behavioral model of health services has been used for over 30 years to predict the utilization of medical health services (Vega et al., 1998) The themes were catalysts for delineating and narrowing the research study.

Conceptual Framework

Andersen's (1995) behavioral model of health services use has been frequently used to predict the utilization of health services for over 30 years. Researchers have used this model extensively to investigate the use of health services in various areas of the health care systems (Babitsch, Gohi, & von Lengerke, 2012). Babitsch et al. (2012) systematically assessed how the behavioral model of health services originated by Ronald M. Andersen was being used and implemented. They found that Andersen's behavioral model has been widely reviewed within studies of health service use and in relation to different medical conditions. The form of the of the model applied within the studies was the 1995 version, the fourth revision of Andersen's behavioral health model. Also, Babitsch et al. (2012) noted significant differences in the variables used. A common thread among the studies included predisposing factors of age ($N = 15$), marital status ($N = 13$), gender/sex ($N = 12$), education ($N = 11$), and ethnicity ($N = 10$); enabling factors of income/financial situation ($N = 10$), health insurance ($N = 9$), and access to care/family physician ($N = 9$); need factors of assessed health condition ($N = 13$) and self-reported/self-perception of health ($N = 9$). Within the different studies, Babitsch et al.

(2012) found links between the factors examined and the use of health care; however, inconsistencies were present within the findings. The presence, intensity, and trend of associations found between the factors and the utilization of health care seemed to be affected by the characteristics of the study populations (Babitsch et al., 2012). This finding that predisposing and enabling factors had different effects in different populations illustrates the importance of studying the effects of these factors in specific populations, such as Mexican Americans.

Lantican (2006) conducted a descriptive-exploratory study to evaluate the utilization of mental health services by 40 Mexican American women in a U.S. border city. Researchers in September 1999 had used an interview questionnaire as the data collection tool and then analyzed the results quantitatively, using frequencies and percentages (Lantican, 2006). The results of the quantitative analysis along with an application of Andersen's initial model of health services showed a general pattern of greater mental health service utilization in proximity to primary care centers. Predisposing factors included sociodemographic factors (female, married, middle-aged, low income, homemaker, eighth-grade education) as well as personal beliefs and perceptions associated with mental health issues and care. The individual's choice to use mental health services may have been related to educational level. Within this study, the participants more likely to use services if they had an 8th grade education than if they had not completed 8th grade. The choice to use services could also have been due to acculturation, as the participants had lived in the United States an average of 15 years (Lantican, 2006). The participants had low levels of education and income, and they used

publicly financed health care services. Enabling factors of this study included access to the health care facility and eligibility to pay for services based on economic status. (Lantican, 2006). Another enabling factor included the availability of culturally appropriate staff. The data from the study support the conclusion that Mexican American women used integrated mental health/primary health care services in a primary care health facility based on self-perceived need (Lantican, 2006). My study expanded on research about U.S.-born Mexican Americans and foreign-born Mexican Americans with depression, examining how education, income, and insurance may have influenced whether they sought treatment.

Since its development over 25 years ago, researchers have critically reviewed and altered Andersen's behavioral model. During the late 1960s the focus of the model changed away from the interaction between the individual receiving care and that person's health outcomes to explaining why individuals chose to use formal health services based on predisposing characteristics, influences that support or hinder use, and the need for care (Andersen, 1995). This model accounts for the use of health services based on predisposing characteristics of the individual, enabling resources, and the need of the individual. I adopted Andersen's (1995) initial behavioral model as the conceptual framework for this study (see Figure 1).

PREDISPOSING>>>> CHARACTERISTICS	**ENABLING>>>> RESOURCES**	**NEED>>>>**	**USE OF HEALTH SERVICES**
Demographic	Personal	Perceived	
Social Structure	Family	Evaluated	
Health Beliefs	Community		

Figure 1. Andersen's behavioral model of health services use.

Andersen classifies predictor variables into three categories in his behavioral model: predisposing, enabling, and need variables. Predisposing variables include demographic and background information such as age and gender. Enabling variables include personal, family, and community resources inclusive of education, income, insurance, and support. Need variables include mental or physical dysfunction and the individual's perception that a need exists (Andersen, 1995). In this study, birth country, education, income, and insurance are the four independent variables I analyzed to determine what association existed with seeking mental health treatment, the dependent variable.

Researchers have used the Andersen behavioral model (1995) to predict use of health care services among the general population by analyzing data in the domains of the model (i.e. predisposing, enabling, and need). A gap in knowledge exists as research information regarding education (predisposing variable), income (enabling variable), insurance (enabling variable), depression (need variable), and their influence on the seeking of mental health services by Mexican Americans with depression is lacking. I analyzed the data to determine if an association existed between the independent

variables (education, income, and insurance) and whether Mexican Americans (U.S.-born Mexican Americans and foreign-born Mexican Americans) sought treatment or did not seek treatment (dependent variable).

Predisposing Variables

Researchers have found that predisposing variables may not always predict the use of mental health services (Lemming & Calsyn, 2004). Women tend to use mental health services more consistently than men (Bovier, Chamot, Eytan, & Perneger, 2001; Green-Hennessy, 2002; Lin, Goering, Offord, Campbell, & Boyle, 1996; Narrow et al., 2000; Watkins, Burnam, Kung, & Paddock, 2001). Cooper-Patrick et al. (1999) found that a positive correlation existed between education and utilization of mental health services.

Unlike gender and education, race has not been confirmed to be a predisposing variable. Cooper-Patrick et al. (1999) and Snowden (1999) found that race was not a consistent predictor of the use of mental health services. My study did not compare people of different racial or ethnic backgrounds, but within the selected group of Mexican Americans, some participants had been born in the United States and some had been born elsewhere. Lantican (2006) believed acculturation may have influenced decisions to access mental health care. In the next section of the literature review, I discuss findings of three large-scale studies of Mexican Americans that indicated significant differences in mental health between Mexican Americans who were U.S. born and those who were foreign born. Therefore, I decided to examine whether being born in the United States correlated with a higher likelihood that Mexican Americans with depression would

access mental health services. Within this study birth country and education were classified as predisposing variables

Enabling Variables

In general, researchers have not found sufficient explanations for variations in the use of mental health services by examining enabling variables. Small positive associations between income and service utilization have been consistent (Green-Hennessy, 2002; Parslow & Jorm, 2000). Positive correlations also exist between insurance coverage and service utilization (Cooper-Patrick et al., 1999; Vega et al., 2001). Within this study I analyzed the extent to which income and insurance were enabling variables.

Need Variables

The strongest predictors of the use of mental health services are need variables. The severity of psychiatric symptoms will predict the use of mental health services (Bovier et al., 2001; Parslow & Jorm, 2000; Ross et al., 1999). A high correlation also exists between substance abuse and the utilization of mental health services (Narrow et al., 2000; Parslow & Jorm, 2000; Wu, Kouzis, & Leaf, 1999). Poverty, disability, stress, and general health are need variables that may also predict the use of mental health services (Bovier et al., 2001; Cooper-Patrick et al., 1999; Narrow et al., 2000; Ross et al., 1999). Additionally, self-perceived need has also been cited within various studies as a predictor of mental health service use (Green-Hennessey, 2002; Parslow & Jorm, 2000; Watkins et al., 2001).

Literature Review Related to Key Variables and/or Concepts

Mexican Americans

The term Hispanics is frequently used to refer to a diverse cultural population. This general label is conceptually inappropriate, as differences within the subgroups exist (Bean & Tienda, 1987; Grenier & Stepick, 1992; Melville, 1994; Molina & Aguirre-Molina, 1994; Molina, Molina-Aguirre, & Zambrana, 2001; Portes & Bach, 1985). Variations exist among the subgroups due to origin and history, reasons for migrating to the United States, and the effect on the immigrants based on the relationship between their country of origin and the United States (Bean & Tienda, 1987; Grenier & Stepick, 1992; Melville, 1994; Molina & Aguirre- Molina, 1994; Molina, Molina-Aguirre, & Zambrana, 2001; Portes & Bach, 1985). The existing intracultural variability among the Hispanic subgroups merits consideration (Pedraza-Bailey, 1985; Portes & Bach, 1985; Portes & Rumbaut, 1990; Portes & Stepick, 1993; Rogler, 1994).

Historically Mexican Americans are the Hispanic subgroup that has resided in the United States the longest. After the Mexican War (1846-1848), the United States took over territories that spanned from Texas to California, and many Mexican citizens chose to stay in the United States. The Mexican Revolution (1910-1917) created economic, social, and political instability, influencing the increase of the Mexican population in the United States. The flow of migration has been affected by the economic hardships in Mexico and by the need for laborers in the United States (U.S. Department of Health and Human Services, p. 132). Mexican Americans are currently the largest Hispanic subgroup in the United States (Lewis-Fernandez, Das, Alfonso, Weissman, & Olfson, 2005). Data

from the 2010 U.S. Census show 63% of the Hispanic population in the United States was of Mexican origin (U.S. Census Bureau, 2011). From 2000 to 2010 the percentage of people of Mexican origin increased by 54% and had a numeric change of 11.2 million from 20.6 million (2000) to 31.8 million (2010) (U.S. Census 2010). This information from the 2010 U.S. Census illustrates the changing diversity of the United States. It is significant as Mexican Americans continue to face health care disparities and underuse mental health services (Guarnaccia & Martinez, 2002).

Guarnaccia & Martinez (2002) found that the risk for developing a mental health disorder is greater for second and later generation Mexican Americans than for recent immigrants. Discrimination, economic decline, lack of job mobility, and unmet social and material aspirations may increase the risk of psychological distress. The social stressors faced by second-generation Mexican Americans may exacerbate mental disorders. Acculturation to the new country increases the likelihood of substance abuse disorders, as the use and abuse of drugs is widespread in the United States (Vega et al., 1998).

The presence of large Mexican communities in principal cities throughout the Southwest has resulted in developing bilingual/bicultural mental health services (Casas & Keefe, 1978; Chavez & Torres, 1994). However, barriers to access to mental health services still exist. Researchers have found that barriers to the utilization of mental health services include lack of health benefits at work, high cost of services, low pay, work pressures, and legal status. Also, the stigma of mental illness within the Mexican American community may act as a barrier to seeking treatment. Alternative sources of support to address distress include the extended family, the community, Catholic and

Protestant churches, and folk resources such as curanderos and espiritualistas (Casas & Keefe, 1978; Chavez & Torres, 1994).

Studies on Mexican Americans and Mental Health

According to Grant et al. (2004), researchers in three large-scale epidemiological studies focused on the mental health of Mexican Americans and compared Mexican Americans born outside the United States with U.S.-born Mexican Americans. The first study was a survey conducted in Los Angeles, California (1983-1984), at the Epidemiologic Catchment Area (LA-ECA). Results of the study indicated the likelihood of acquiring a lifetime diagnosis of depression, dysthymia and phobia was greater for Mexican Americans born in the United States than for Mexican Americans born outside of the United States. In the early 1990s the Mexican American Prevalence and Services Survey (MAPPS), an epidemiologic survey, was carried out to examine how the mental health of Mexican Americans had been affected by immigrant status. This study conducted in Fresno County, California, had 3012 adult participants of Mexican origin. The results indicated that U.S.-born Mexican Americans had greater rates of mood, anxiety, and substance use disorders than did foreign-born Mexican Americans. The third study consisted of a small subset of Mexican Americans, who were part of the 1990-1992 National Comorbidity Survey (NCS). The results of this study indicated that higher rates of other psychiatric disorders and post-traumatic stress were present among U.S.-born Mexican Americans as compared with foreign-born Mexican Americans (Grant et al., 2004). Results of the three studies demonstrate that the length of time the study

participants lived in the United States was a significant factor in developing a mental health disorder (U.S. Department of Health and Human Services, 2001, p. 134)

The Los Angeles ECA study. Los Angeles, California, was the site of the NIMH Epidemiologic Catchment Area program (LA-ECA) conducted from 1983-1984. Mexican Americans were oversampled to facilitate the comparison of their mental health with the Anglo-American sample in Los Angeles and at four other research sites that were part of the national study. The NIMH Diagnostic Interview Schedule was available in English and Spanish for the study (Karno et al., 1987). The researchers gathered information on migration history to compare the mental health of recent immigrants to the United States with both long-term residents and Mexican Americans born and raised in the United States.

Comparatively, Mexican Americans born in the United States had higher rates of disorder than did immigrants from Mexico (Burnam, Hough, Karno, Escobar, & Telles, 1987). Guarnaccia and Martinez (2002) contend it may have been easy to project immigrants would experience high stress levels due to migration to the United States, where they would have lower financial and educational levels than much of the population. They argued, however, that the living conditions of recent immigrants might have improved significantly in the United States. Alternatively, U.S.-born Mexican Americans and longer term residents from Mexico may have felt a sense of deprivation and social stress when they compared their economic status to the standards of living in the United States, which could explain the findings of LA-ECA (Guarnaccia & Martinez, 2002).

The Mexican American Prevalence and Services Survey (MAPPS). During the early 1990s, researchers studied the prevalence of primary psychiatric disorders in a random sample of over 3000 adults of Mexican origin in Fresno, California. The investigators of the Mexican American Prevalence and Services Survey (MAPPS) used the Composite International Diagnostic Interview (CIDI), which was developed by the World Health Organization to evaluate for DSM-III-R diagnoses. The MAPPS study found the prevalence of psychiatric disorders was twice as high for the U.S.-born Mexican American sample than for the Mexican-born sample. The results also indicated that U.S.-born women and men had higher rates of substance abuse and dependence than did Mexican-born immigrant women and men (Escobar, Nervi, & Gara, 2000).

National Comorbidity Survey. The National Comorbidity (NCS) conducted between 1990 and 1993 used a representative sample of the U.S. population (n = 8098). 9% of the sample was Hispanic. Like the MAPPS study, the NCS used the CIDI (Escobar, et al., 2000). The Hispanic sample was 70% Mexican origin and 30% Puerto Rican, Cuban, or other. Comparatively speaking, PTSD and other psychiatric disorders were more prevalent among U.S.-born Mexican Americans than among foreign-born Mexicans (Grant et al., 2004).

Research: Post-U.S. Surgeon General 2001 Report

In 2001, the U.S. Department of Health and Human Services published the U.S. Surgeon General's report *Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health: A Report of the Surgeon General*, which reported that significant disparities in mental health care for Latinos exist (Lopez, Barrio, Kopelowicz, & Vega,

2012). This report advocated for an increase in research on disparities in mental health care for Hispanics. Researchers Lopez et al. (2012) document that research on these disparities has increased since the 2001 report was published (Lopez et al., 2012). The research on disparities in mental health care is important as it can provide direction for the mental health delivery system in meeting the mental health needs of Hispanics.

After 2001, the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) and the CPES were published. These two national surveys focused on U.S. majority and minority groups occurred during the same time frame (2001-2003). The NESARC included 43,093 respondents (24,507 Whites, 8,308 U.S.-born Hispanics, 8,245 African Americans, and 2,033 people in a fourth category that combined Asian Americans, Pacific Islanders, and Native Americans). The CPES consisted of three national surveys representative of minority and majority groups. The first of three surveys was the National Comorbidity Survey-Replication (NCS-R), which used a probability sample (N = 9,282) from 48 states in the United States. The survey respondents included 73% non-Hispanic Whites, 12% non-Hispanic Blacks, 11% Hispanics, and 4% others. All subjects of the NCS-R were English speakers 18 years of age and older. The second survey, the National Survey of American Life (NSAL), focused on adults of African origin 18 years and older, inclusive of African Americans (N = 3,570), Afro-Caribbeans (N = 1,623), and non-Hispanic Whites (N = 891). The third survey, the National Latino and Asian American Study (NLAAS), gathered data from a nationally representative sample of Hispanics (N = 2,095) and Asian Americans (N = 2,095) 18 years and older (Lopez et al., 2012). The NLAAS and the NESARC enhanced

the understanding of the mental health status of Hispanics living in the United States. Additionally, these surveys provided for the first time estimates of the prevalence of mental health disorders and service utilization among Hispanics on a national scale (Lopez et al., 2012)

Depression and Mexican Americans

Recent studies continue to aggregate participants from various Hispanic subgroups to investigate the prevalence of mental health disorders. One study reported that Hispanics were more prone to develop depressive symptoms than non-Hispanics (Liang, Quinones, Bennett, & Ye, 2011). Another study found that the prevalence of depression, anxiety, and substance abuse was higher for Hispanic women (30.2%) than for Hispanic men (30%) (Alegria et al., 2007). Lifetime prevalence rates of depression differ among Hispanic subgroups, with a rate of 22.7% for Puerto Ricans and a rate of 14.5% for Hispanics of Mexican heritage (Gonzales, Taraf, Whitfield, & Vega, 2010). Gonzales et al. (2010) indicated that although the prevalence rates of depression is highest among Puerto Ricans, the chronicity and intensity of depression may be higher for Mexican Americans. Oquendo et al. (2004) found the lifetime rates of major depressive episodes were higher for Puerto Ricans and white non-Hispanic Americans than for Mexican Americans.

Evidence shows that the rates of depression may increase for Hispanics based on the length of time they have lived in the United States (Breslau, Borges, Hagar, Tancredi, & Gilman, 2009; Gonzales et al., 2010). People of Mexican descent born in the United States may be at a higher risk for depression compared to foreign-born Mexicans who

immigrated after the age of 13 (Breslau et al., 2009; Mendelson, Rehkopf, & Kubzasky, 2008).

Predictive factors of depression. Holahan, Moerkbak, and Suzuki (2006) found that Mexican Americans' inability to access resources to alleviate numerous social and economic stressors may be a ramification of their status as a minority. Another study by Liang et al. (2011) indicated that differences in the prevalence rates of depression between Hispanics and white non-Hispanic Americans may be due to the socioeconomic disadvantages of being part of a minority group. Additionally, Hispanics may be predisposed for depression as they may encounter difficulties finding a stable job due to discrimination, low educational levels, and lack of English proficiency (Treviño, Wooten, & Scott, 2007).

Other studies related to the mental health of individuals of Mexican origin in the United States have compared Mexican Americans with other ethnic minorities (Guarnaccia & Martinez, 2002). Several of these studies used the NIMH Center of Epidemiological Studies Depression Scale (CES-D) as the assessment instrument (Burnam, Timbers, & Hough, 1984; Frerichs, Aneshensel, & Clark, 1981; Roberts, 1980, 1981; Roberts & Vernon, 1983; Vega, Kolody & Valle, 1987; Vega, Kolody, Valle, & Hough, 1986; Vega, Warheit, Buhl-Auth, & Meinhardt, 1984; Vernon & Roberts, 1982). These studies found women who were older, less acculturated, and recently arrived in the United States had higher depression symptom scores than women who had been recently separated or divorced. Also, some researchers found evidence that migrant farmworker populations are at a high risk for mental distress. Mexicans frequently work as farm

laborers (Vega, Scutchfield, Karno, & Meinhardt, 1985; Vega, Warheit & Palacio, 1985). Guarnaccia and Martinez (2002) contend that when sociodemographic variables serve as covariates within the studies, differences among subgroups and other ethnic populations dissipate, comparatively the disadvantaged social status of Mexican Americans is the basis for higher rates of depressive symptoms.

Acculturation. Acculturation, or cultural adaption, is the individual's contact and exposure with the mainstream culture and the changes the person experiences due to this contact with another culture (Berry, Poortinga, Seagall, & Dasen, 1992; Torres & Rollock, 2007). Researchers Zea, Asner-Self, Birman, and Buki (2003) indicate the five top areas of acculturation frequently measured in the literature are behavior, cultural identity, language, knowledge, and values. The level of English fluency has consistently been referenced as an indicator of acculturation as it is observable and directly impacts communication with the mainstream culture. The cultural adaptation of values represents a more profound level of adjustment than language use (Zea et al., 2003). Researchers report the existence of apparent inconsistencies in the literature about the relationship between variables related to culture and mental health (Rogler, Cortes, & Malgady, 1991). Cuellar and Roberts (1997) indicate it is not clear if acculturation or cultural exposure encourages or discourages the development of mental problems.

Falcon and Tucker (2000) cite the probability of Hispanics in the United States enduring psychological problems is high. The data from the NCS, which used a national sample of adults, showed Hispanics had the highest lifetime prevalence rates of a major depressive episode (Blazer, Kessler, McGonagle, & Swartz, 1994). Data show Hispanic

immigrants have lower prevalence rates of depression than U.S.-born Hispanics (Burnam et al., 1987; Vega et al., 1998) and researchers have found Hispanics have more depressive symptoms than non-Hispanic Whites (Cuellar & Roberts, 1997). This information supports the research findings that U.S.-born Mexican Americans have higher rates of depression than foreign-born Mexican Americans.

Education, Income, and Insurance

According to the 2010 Census, 308.7 million people lived in the United States. 50.5 million were of Hispanic origin (U.S. Census Bureau, 2010). The definition of Hispanic or Latino as used in the 2010 Census includes an individual of Cuban, Mexican, Puerto Rican, South or Central American or Spanish origin. Research by Vega et al. (2007) shows more than 40% of this Hispanic population may be foreign-born, consisting of immigrants, as shown by previous trends. Consequently, characteristics of this population may include low education and income levels, high poverty rates, and lack of insurance. These traits dilute access to mental health care, create language barriers, and result in faulty diagnosis, inadequate treatment follow-up and continuity, and dissatisfaction with care obtained. The problems associated with the characteristics are well documented; however, research to address them is lacking. The deficits are evident, as Hispanics have not been part of the extensive studies in intervention development and clinical trials sponsored by the NIMH (Vega et al., 2007). Various government and private organizations have concluded that minority populations are the recipients of inadequate medical and psychiatric treatment. The dearth of research studies focused specifically on U.S.-born Mexican Americans and foreign-born Mexican Americans and

factors impacting whether they seek mental health treatment for depression were the catalysts for this study.

Education. Research indicates the level of formal education for Hispanics is less than the national average . Of U.S. Hispanics over age 25, 52.5% were high school graduates and 10% were college graduates in the year 2000. Comparatively, nationwide at that same time, of individuals over age 25, 80% of all individuals over age 25 were high school graduates and 24% were college graduates (U.S. Census Bureau, 2003). The educational attainment of Hispanics is influenced by where they were born. In 1999, U.S. Census data indicated 44% of foreign-born Hispanics 25 years and older had high school diplomas; comparatively, 70% of U.S.-born Hispanics over 25 years of age were high school graduates. Foreign-born Hispanics ages 16-24 had a dropout rate more than twice the dropout rate of U.S.-born Hispanics, ages 16-24 (Kaufman, Kwon, Klein, & Chapman, 2000; U.S. Department of Health and Human Services, 2001).

Cuban Americans, Puerto Ricans, and Mexican Americans are the three main Hispanic subgroups in the United States, and the levels of educational achievement varies greatly by group. The educational achievement of Mexican Americans as a group is significantly lower than for other groups of Hispanics. Cuban Americans are the Hispanic subgroup with the highest percentage of people with formal education. Of Cuban Americans 25 years and older, 70% are high school graduates, and 25% of Cuban Americans are college graduates. In contrast, 64% of Puerto Ricans and only 50% of Mexican Americans are high school graduates. Additionally, 11% of Puerto Ricans are college graduates and 7% of Mexican Americans are college graduates (U.S. Department

of Health and Human Services, 2001).). Data collected by the 2010 U.S. Census indicated the high school graduation rate for Mexican Americans 25 years and older was 30.8%. Only 19.5% had some college or an associate's degree, 7.9% had a bachelor's degree, and 2.6% had an advanced degree (U.S. Census Bureau, 2011). When comparing census data from 2000 and 2010, the graduation rates for the population 25 years and older decreased from 50% (2000 Census) to 30.8% (2010 Census) for Mexican Americans. This difference of 19.2% is significant and indicates an increase in high school dropout rates for Mexican Americans. The low levels of education among Mexican Americans mean that it is critical to investigate whether Mexican Americans' educational level can influence the decision to seek mental health treatment. Gaps in knowledge were evident as studies that examined the impact of years of education on seeking treatment by Mexican Americans with depression were scarce.

Income. The educational status and income status of the Hispanic subgroups of Cuban Americans, Puerto Ricans, and Mexican Americans parallel each other. Researchers for the U.S. Department of Health and Human Services (2001) found that Cuban Americans had a median family income of $39,530, with 14% of Cubans below the poverty line and an unemployment rate of 5% for individuals 16 years and older. Puerto Ricans had a median family income of $28,953, with 31% of Puerto Ricans below the poverty line and an unemployment rate 7% for individuals 16 years and older. Mexican Americans had the lowest median family income of the three subgroups of Hispanics, $27,883, with 27% of Mexican Americans below the poverty line and an unemployment rate of 7% for individuals 16 years and older U.S. Department of Health

and Human Services, 2001). U.S. Census data from 2010 for the category 18-64 years of age indicated 22.4% of Mexican Americans were below the poverty level with an unemployment rate of 9.8% for individuals 16 and over. The poverty rate seems to have decreased by 4.6% between 2000 and 2010 for Mexican Americans when comparing poverty for individuals 16 years and older (U. S. Department of Health and Human Services, 2001). and for individuals 18-64 years of age (U.S. Census Bureau, 2011). Within the same categories, the unemployment rate increased from 7% to 9.8% from 2000-2010 (U.S. Census Bureau, 2013; U.S. Department of Health and Human Services, 2001).

Insurance. A significant barrier to mental health care for Hispanics is the lack of insurance. Hispanics make up 12% of the U.S. population; however, out of every four uninsured Americans, one is of Hispanic heritage (Brown et al., 2000; Kaiser Commission, 2000). On a national scale, 37% of Hispanics are not insured, which is more than twice the percentage for Whites. The high percentage of uninsured Hispanics is attributed to lack of work-based coverage. Only 43% of Hispanics have work-related coverage through their place of employment, compared to 73% of non-Hispanic Whites. Fewer than one in five (18%) of Hispanics have Medicaid or other public insurance (U.S. Department of Health and Human Services, 2001).

DeNavas-Walt, Proctor, and Smith (2009) claim it is evident from U.S. Census Bureau data that significant correlations exist among variables such as race, ethnicity, income, and lack of insurance. The percentage of uninsured Hispanics was higher than the percentage of uninsured non-Hispanic Whites (De-Navas et al., 2009). The Hispanic

population has the highest uninsured rate (30.4%) among all racial and ethnic groups. Within the non-Hispanic White population, only 9.9% reported they were uninsured (National Center for Health Statistics, 2008)**.** This rate increased from 30.7% (14.6 million) in 2008 to 32.4% (15.8 million) in 2009. According to the census data from 2009, Americans with incomes of less than $25,000 were more likely to be uninsured, compared to Americans with incomes of more than $75,000 (DeNavas-Walt et al., 2009). Within the households with incomes of less than $25,000, 26.6% were uninsured, whereas, within families with incomes of $75,000 only 9.1% were uninsured (DeNavas-Walt et al., 2009). The U.S. Census Bureau's research on insurance provided general information on the lack of coverage for U.S. Hispanics and on how income may affect the likelihood of being uninsured. However, studies related specifically to Mexican Americans with depression and how insurance status may influence where they seek treatment were lacking.

Mental Health Services

The mental health care for U.S. Hispanics may be inadequate due to patient and systemic factors. Socioeconomic factors, language proficiency and citizenship status may restrict the individual's access to health care. Reasons commonly cited for Hispanics not utilizing mental health services are lack of health insurance and low levels of English proficiency. Mexican immigrants are less likely than U.S.-born Mexican Americans to pursue mental health treatment (Guarnaccia & Martinez, 2002). Systemic factors in need of improving for Hispanics include access to care, utilization of mental health care, and quality of care.

Access to care. Efficient access is defined as the ability of the patient to navigate the health care system on an ongoing basis. The skill to navigate the system is especially necessary for a patient to access mental health care, as frequent treatment is standard procedure. In essence, access to care requires entrance into the care system and the receipt of care on an ongoing basis (Delgado et al., 2006).

One in five Hispanics living below the poverty line may live in neighborhoods that are low income and lacking in resources for mental health care. Hispanics are more likely than other ethnic groups to be uninsured as they may work in jobs that do not offer health care benefits. Moreover, the number of Hispanics without insurance has increased, and this lack of coverage has resulted in Hispanics reporting unmet medical needs, having no medical provider, and not visiting a doctor within the previous year (Delgado et al., 2006).

Existing disparities in income and health insurance coverage do not account for inequalities to access. A study of foreign-born Mexican Americans and U.S.-born Mexican Americans indicated knowledge of where to locate a provider increased the probability that a person would pursue and use a mental health care specialist. Language proficiency is a significant issue, as three out of ten Hispanics indicated difficulties communicating with their providers. The lack of U.S. mental health professionals of Hispanic descent may contribute to the language barrier. For every 100,000 Hispanics there are 29 Hispanic providers; in comparison, for every 100,000 non-Hispanic Whites there are 173 White providers. This lack of Hispanic mental health specialists as well as

the unbalanced geographic distribution of providers may affect Hispanics living in rural areas and in other Hispanic population clusters (Delgado et al., 2006).

Mental health services utilization. Research indicates Mexican Americans underuse mental health services (Briones et al., 1990; Hough et al., 1987; Peifer, Hu, & Vega, 2000; Pescosolido et al., 1998; Vega & Alegria, 2001; Vega et al., 2001; Vega et al., 1999; U.S. Department of Health and Human Services [USDHHS], 2001; Wells et al.). Data from the LA-ECA study indicated 11% of Mexican Americans who had experienced a mental health disorder in the previous six months would seek medical treatment compared to 22% of Whites who had experienced a mental health disorder within the same time frame. It is more likely for Mexican Americans with psychiatric disorders and other mental health issues to seek treatment from general practitioners than from mental health specialists (Delgado et al., 2006; Guarnaccia & Martinez, 2001). Data collected in previous studies have revealed that in addition to seeking mental health treatment from a general medical provider, Mexican Americans have been likely to see priests, chiropractors, and counselors. Patients also went to informal sources such as folk healers, spiritualists, and psychics (Delgado et al., 2006).

Culture and treatment for depression. The perceptions of Hispanic people about depression and when to seek treatment for symptoms of depression of Hispanic people may differ from the views of mainstream America. (Cabassa & Zayas, 2007; Lackey, 2008). For example, feelings of hopelessness and depression may be accepted as part of life by some Hispanics. As a result, Hispanics may turn to family for support instead of seeking professional help. Two reasons Hispanics may request informal help

are: (1) they may feel comfortable discussing personal problems with family members, and (2) and they may not have access to health care (Cabassa & Zayas, 2007). *Familismo*, or familism, may influence the decision to seek help within the family. Familismo is a cultural term associated with Hispanics that connotes high levels of loyalty, in addition to involvement and strong connections with members of the family (Ayon, Marsiglia, & Bermundez-Parsai, 2010; Cabassa & Zayas, 2007; Mendelson et al., 2008).

Summary and Conclusions

Historically, Mexican Americans are the Hispanic subgroup that has lived in the United States the longest, and they are currently are the largest Hispanic subgroup (Lewis- Fernandez et al., 2005). Researchers have found that U.S.-born Mexican Americans tend to underuse mental health services and have a greater risk for developing major depression than foreign-born Mexican Americans (Guarnaccia & Martinez, 2002; Lewis-Fernandez et al., 2005). The Andersen behavioral model of health services use was the conceptual framework used to review how birth country, education, income, and insurance may affect the likelihood of whether Mexican Americans (U.S.-born and foreign-born) will seek treatment for depression. This model has been used extensively to predict the use of health services among the general population. A gap in knowledge exists, as research information regarding education (predisposing variable), income (enabling variable), and insurance (enabling variable), depression (need variable), and whether Mexican Americans with depression seek mental health services is lacking. I have used quantitative analysis of the data to determine what associations exist between the independent variables (education, income, and insurance) and whether Mexican

Americans (U.S.-born and foreign-born) chose to seek treatment or did not seek treatment (dependent variable). Chapter 3 is an outline of the methodology of the study and the utilization of the archival data collection.

Chapter 3: Research Method

The purpose of this study was to examine the impact education, income, and insurance have on the utilization of mental health services by Mexican Americans (U.S.-born and foreign-born) with depression. I used a multivariate logistic regression procedure to test the hypotheses and answer the research questions. This study was necessary because Mexican Americans, the largest subgroup of Hispanics in the United States tend to underuse mental health services (Guarnaccia & Martinez, 2002).

In addition, when reviewing literature for the study, I found a dearth of current studies related to the service utilization of treatment for Mexican Americans. Researchers have focused on the quality of care and use of mental health services of the Hispanic population made generalizations and inferences assuming homogeneity and did not consider internal variability among subgroups (Perez et al., 2009). According to Vega et al. (2007), deficits in the inclusion of Hispanics in mental health clinical studies exist. I sought to address this gap in knowledge by focusing specifically on one subgroup of Hispanics in my study of the impact birth country, education, income, and insurance have on the utilization of mental health services by Mexican Americans (U.S.-born and foreign-born) with depression. My purpose is to provoke a discussion of the results of my study that will inspire community advocacy to address the lack of mental health resources available to the Mexican American population, resulting in social change.

This chapter presents the research method of the current study, including the research design and rationale, methodology, and potential threats to the validity of the study. The discussion of methodology includes description of the study population,

procedures used for sampling and recruitment, instruments used, collection of data procedures, and analysis of data validation.

Research Design and Rationale

In this study I used a quantitative model to examine the impacts birth country, education, income, and insurance have on the utilization of mental health services by Mexican Americans (U.S.-born and foreign-born) with depression. I chose a quantitative approach because it aligned with the focus of the study, facilitating an inquiry into correlations between the independent variables and the dependent variable within this study. The data used came from electronically archived data gathered in a study of the genetics of bipolar and related disorders conducted from approximately 2011 to 2015 by researchers with the Texas Tech University Health Sciences Center (TTUHSC). I used this archival data to determine to what extent birth country, education, income, and insurance predicted whether Mexican Americans (U.S.-born and foreign-born) with depression will seek treatment. The dependent variable in this study was seeking treatment for depression. The independent variables in this study were birth country, education, income, and insurance. I analyzed the data using multiple logistic regression. The gender and age, covariates, of the participants were controlled to avoid influence, as described by Dobalian & Rivera (2008).

Research Questions and Hypotheses

The research questions and hypotheses were as follows:

RQ1. Is there a statistically significant association between birth country (U.S.-born or foreign-born) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

H1. There is no statistically significant association between birth country (U.S.-born or foreign-born) and reporting seeking mental health treatment among Mexican Americans with depression.

H1. There is a statistically significant association between birth country (U.S.-born or foreign-born) and reporting seeking mental health treatment among Mexican Americans with depression.

RQ2. Is there a statistically significant association between education (< 12 years or ≥ 12 years) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

H2. There is no statistically significant association between education (< 12 years or ≥ 12 years) and reporting seeking mental health treatment among Mexican Americans with depression.

H2. There is a statistically significant association between education (< 12 years or ≥ 12 years) and reporting seeking mental health treatment among Mexican Americans with depression.

RQ3. Is there a statistically significant association between income (< $15K/year or ≥ $15K/year) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

H3. There is no statistically significant association between income (< $15K/year or ≥ $15K/year) and reporting seeking mental health treatment among Mexican Americans with depression.

H3. There is a statistically significant association between income (< $15K/year or ≥ $15K/year) and reporting seeking mental health treatment among Mexican Americans with depression.

RQ4. Is there a statistically significant association between insurance (yes or no) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

H4. There is no statistically significant association between insurance and reporting seeking mental health treatment among Mexican Americans with depression.

H4. There is a statistically significant association between insurance and reporting seeking mental health treatment among Mexican Americans with depression.

RQ5. What is the likelihood that birth country, education, income, and insurance predict seeking mental health treatment among Mexican Americans with depression?

H5. It is not likely that birth country, education, income, and insurance will predict seeking mental health treatment among Mexican Americans with depression.

H5. It is likely that birth country, education, income, and insurance will predict seeking mental health treatment among Mexican Americans with depression.

Methodology

Population

The participants for this study consisted of participants in the study of genetics of bipolar and related disorders conducted at the Center of Emphasis in Neurosciences at TTUHSC. The participants selected for this study were those identified as having depression based on the results of the MINI, a short diagnostic structured interview. The study population for the archived study consisted of subjects affected by bipolar disorder, schizophrenia, or major depression and subjects not affected by bipolar disorder, schizophrenia, or major depression, men and women between the ages of 18-100, and residents of Texas willing to participate.

Procedures for Using Archival Data

Researchers conducted the genetics of bipolar and related disorders study to determine if there are specific characteristics in a person's genes that make the individual more likely to develop certain diseases, such as bipolar disorder, schizophrenia, and other related mental disorders, or might determine how a person responds to treatment. The participants recruited were between the ages of 18 and 100 and were from the Border

region in West Texas. Participants included (a) people with a diagnosis of bipolar disorder, schizophrenia, or other related mental disorders and their family members and (b) individuals without a diagnosis of a mental illness. The total number of participants in the archived data was 2,400. The sample size for this study consisted of 203 participants diagnosed with depression.

Researchers found participants for the genetics of bipolar and related disorders study by posting information at local mental health clinics and hospitals, by advertising via online sources and word of mouth, and by posting flyers and brochures at university and college campuses. Potential participants were also identified through call lists purchased from a marketing company. Those interested were then screened by the study staff. Letters approved by the Institutional Review Board (IRB) of TTUHSC were sent to individuals on the list before they were contacted by phone. Once a potential subject made contact with the research team or vice versa, a 5- to 10-minute screening interview was conducted in person or via telephone to check for study eligibility. The participants received the study information in a written consent form in the language of their preference. The research staff conducted the informed consent process in a private room where they reviewed all of the sections with each potential participant and answered any questions. Once potential participants understood the information presented, they were each provided a copy of the consent form to sign if they chose to participate.

The participants answered questions about their mental health and any medical problems they may have had by completing the Mini-Mental State Examination, the demographic section of a modified Diagnostic Interview for Genetic Studies, and a

medical history. Within the Family Interview for Genetics Studies section, participants answered questions related to family history of mental and medical illness. The participants also completed a series of self-report forms and questionnaires that were part of the genetics of bipolar and related disorders study and included: (a) Service Utilization Form, (b) QEESI (Quick Environmental Exposure and Sensitivity Inventory), (c) Recent Life Events, (d) Personal Community Assessment, (e) Q-LES-SF (Quality of Life Event Scale Short Form), (f) WHO-DAS (World Health Organization Disability Assessment Schedule II), (g) NEO Five Factor Inventory (Personality Inventory), (h) PPSDQ (Personal Preferences Self-Description Questionnaire), (i) Personal Resource Assessment (PRA), (j) Early Trauma Inventory-Self Report Short Form (ETISR-SF), (k) Perception of Environmental Mastery (PEM), (l) Cultural Mistrust Inventory & Structural Assimilation (CMI), and (m) Zavala Legal Questionnaire. Physicians were available to provide medical care if necessary, and a psychiatrist was available if any participant needed to discuss feelings that might emerge in response to the questions. The participants also received a list of available community resources and psychiatrists in the area. The participants completed the visit in three to four hours and were compensated $60 for their time in check or cash upon completion of their visit.

The archival data collected for the primary study were stored at the Center of Emphasis in Neurosciences. After receiving permission to access this dataset from TTUHSC's IRB via the principal investigator of the study, I selected a subset of 203 individuals. Identification of the sample included extracting subjects identified as Mexican Americans (U.S.-born and foreign-born) who had been diagnosed with

depression by the MINI. The participants' information was clean of personal identifiers because each subject and each person's responses were coded using a nine digit code. The subjects and their data on education, income, and insurance had been assigned codes as described in the next section. The participants' answers to questionnaires revealed whether the participants had accessed mental health care as well as the different providers individual patients had selected for treatment of their depression.

Instrumentation and Operationalization of Constructs

Researchers in the primary study from which I took archival data used the MINI to assess participants for mental disorders. This instrument is a short diagnostic structured interview developed in France and the United States to investigate 17 disorders based on the diagnostic criteria of the Diagnostic and Statistical Manual (DSM)-III-R (Lecrubier et al., 1997). The MINI is designed to permit administration by nonspecialized interviewers, and its focus is on the existence of current disorders. A comparison of the interrater and test-retest reliability and validity of the MINI was conducted with the CIDI and the Structured Clinical Interview for DSM-III-R. The MINI and the CIDI were administered to 346 patients (50 nonpsychiatric and 296 psychiatric) and the interrater and test-retest reliability of the MINI were good (Lecrubier et al., 1997).

Data collection and analysis of archival data. The TTUHSC IRB reviewed the data for this study and provided recommendations for the study before I proceeded with it. I adhered to the provisions of both the Protected Health Information (PHI) and of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations to ensure the protection of the participants in accordance to IRB policy for data collection.

Identification of the participants was by a nine-digit code to ensure confidentiality; therefore, informed consent was not required of the participants from the archival data for this study.

Per institutional protocol at TTUHSC, data for this study were stored in an electronic file database and were available for this study for six months. I used the Statistical Package for the Social Sciences (SPSS) to analyze data to find answers to my research questions.

Independent variables. Participants in the archived study completed questionnaires about demographic information and service utilization. Trained research study staff transferred data from the questionnaires into the TTUHSC database, and a profile of each participant was completed. These personnel also assigned codes to the responses of each participant. A participant's ethnicity was coded 1 for the answers Hispanic or Latino under the self-reported ethnicity category. Participants had also answered the question "In which country were you born?" Research staff assigned participants who were born in the United States a code of 0 and foreign-born Mexican Americans a 1.

The data for education, income, and insurance, three of the four independent variables, came from answers to a series of questions within the forms requesting information on demographics. A participant's educational level was established by the answer to "What is the highest grade in elementary or high school that you finished and got credit for?" Participants who reported receiving a high school diploma or GED certificate then answered "Did you complete one or more years of college credit?" An

affirmative response was followed by the question "How many years of college/university did you complete?" These responses were coded 0 for 12 years or more of education and 1 for less than 12 years of education. Income level was established by answering "What was your approximate income last year?" The responses were coded 1 for incomes of less than $15K and 2 for incomes of $15K or more. Participants answered the question "Do you have any type of health insurance?" The responses were coded 0 if the participant answered yes and 1 if the answer was no.

Dependent variable. The choice of whether to go for treatment of depression was the dependent variable for this study. The participants of the archived study completed the Service Utilization Form, answering questions about the places a person should go for certain types of personal problems. Participants answered the question "How about you—have you ever gone anywhere for advice and help with a personal problem?" A participant who answered yes also answered the next question of "Where did you go for help?" Participants selected from the following choices: clergy/priest/rabbi, doctor, psychiatrist, psychologist, other mental health practitioner or agency, social service agency for handling nonpsychological problems, lawyer, or other. For this study the answers were coded 1 if the respondent indicated mental health specialist and 0 if the response was other.

Threats to Validity

The use of the MINI, which is a combination of self-report and interview data, presented a threat to the validity of the study. Some data may not have been recorded

correctly by the interviewer or may have been inaccurately self-reported by the participant.

Ethical Procedures

The data of participants in this study were archived by TTUHSC's Center of Emphasis in Neurosciences in El Paso, Texas. To protect the participants and comply with HIPAA, the archived data did not contain participants' personal or identifiable information. The archived dataset contained demographic information, diagnoses, and responses from the Service Utilization Form. The archived data were collected solely for the purpose of this study. I accessed a hard copy of the archived data which was then recorded into an Excel file with a security protection that only I had access to. I programmed the SPSS to extract the data from the Excel file. The Excel file will be destroyed as soon as this dissertation is completed.

Participation in the archived study was entirely voluntary, and participants were aware that study results could be used in publications or presentations without the use of personal identifiers. The results and findings from the study will be reported to TTUHSC-Center of Emphasis in Neurosciences, with a recommendation, if appropriate, to TTUHSC upon the completion of this dissertation. I received permission with a signed data agreement to access the archived data for this study. Walden University's IRB reviewed and approved this study and assigned it an approval number. I also completed the web-based training course Protecting Human Research Participants from the NIMH and TTUHSC's HIPAA course as a prerequisite to working with the archived data.

Summary

This study was designed to explore the impact education, income, and insurance have on predicting whether Mexican Americans (U.S.-born and foreign-born) seek treatment of depression. I used descriptive statistics to present the demographic data, 2 x 2 chi-square tests of independence, and binary logistic regression to examine the association between the independent variables and the dependent variable. Within this chapter the discussion centered on the study population, sampling, recruitment procedures, instruments used, collection of data, and analyses of data. The next chapter, Chapter 4, will present a detailed review of the study results.

Chapter 4: Results

In this chapter, I will present the purpose of the study, research questions, data collection, descriptive statistics, and results of four 2 x 2 chi-square tests of independence and binary logistic regression analysis. The chapter will close with a concise summary and provide a transition to the interpretive material in Chapter 5.

The purpose of this quantitative study was to examine the efficacy of birth country, education, income, and insurance in predicting the likelihood that respondents would report seeking mental health services to treat depression. The regression model contained four independent variables (birth country, education, income, and insurance). I designed this study to test the hypotheses and answer the research questions described in the following section. I analyzed data collected at one research site located in the Border region of West Texas. The data were part of a genetics of bipolar and related disorders study conducted at the Center of Emphasis in Neurosciences at TTUHSC.

The five research questions I sought to answer were as follows:

RQ1. Is there a statistically significant association between birth country (U.S.-born or foreign-born) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

RQ2. Is there a statistically significant association between education (< 12 years or ≥ 12 years) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

RQ3. Is there a statistically significant association between income (< $15K/year or ≥ $15K/year) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

RQ4. Is there a statistically significant association between insurance (yes or no) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression?

RQ5. What is the likelihood of birth country, education, income, and insurance predicting seeking mental health treatment among Mexican Americans with depression?

Data Collection

I collected and analyzed the archived data from the Center of Emphasis in Neurosciences over a period of 2 months at the site after fulfilling the site's IRB requirements. The total number of participants selected from the archived data for this study was 203 participants, who constituted a subset of the individuals identified by the MINI in the primary study as having depression. The participants' information was clean of personal identifiers because each subject was coded using a nine-digit code. I chose the sample for my study by extracting subjects identified as Mexican Americans (U.S.- and foreign-born) diagnosed with depression. Researchers for the primary study had assigned codes to participants and to their data on birth country, education, income, and insurance.

For my quantitative study I used a sample of convenience from an epidemiological study conducted in El Paso County (West Texas). The epidemiological

study was conducted to gather data on mental and medical illnesses in the region. The participants in the primary study were randomly selected in El Paso County and were representative of the region. The participants completed English/Spanish assessments conducted by trained personnel. The data are somewhat representative of Mexican Americans in Texas because the participants are from this one region.

Table 1

Frequencies and Percentages for Study Variables (N = 203)

Variable	*N*	*%*
Gender		
Male	48	23.6
Female	155	76.4
Birth country		
U.S.-born	92	45.3
Mexico	111	54.7
Education		
< 12 years	119	58.6
≥ 12 Years	84	41.4
Income		
< $15K	129	63.5
≥ $15K	74	36.5
Insurance		
Yes	122	60.1
No	81	39.9
Sought mental health treatment		
Yes	107	52.7
No	96	47.3

Results

I conducted five statistical analyses to address the five research questions. I used four 2 x 2 chi-square tests of independence to assess the association between birth country (U.S.-born or foreign-born), education (< 12 years or 12 ≥ years), income (< $15K/year or ≥ $15K/year), insurance (yes or no), and whether the participant sought mental health treatment (RQ1, RQ2, RQ3, and RQ4, respectively). I conducted a binary logistic regression analysis to assess the likelihood of birth country, education, income, and insurance together predicting respondents reporting they sought mental health treatment (RQ5).

Research Question 1

I used a chi-square test of independence (with Yates's continuity correction) to assess the association between birthplace (U.S.-born or foreign-born) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression. The results indicated there was a significant association between birthplace and reporting seeking mental health treatment, $\chi^2(1, n = 203) = 5.113$, $p = .024$, $phi = -.169$. The null hypothesis that there is no association between birthplace and seeking mental health treatment was thus rejected, and the alternative hypothesis that there is a significant association between birthplace and seeking mental health treatment was accepted. Table 2 depicts the frequencies and percentages of the birthplace and mental health treatment variables.

Table 2

Frequencies and Percentages of Birthplace by Mental Health Treatment

	U.S.-born		Foreign-born	
Sought mental health treatment	*n*	*%*	*n*	*%*
Yes	57	62.0	50	45.0
No	35	38.0	61	55.0
Total	92	100.0	111	100.0

Note. $N = 203$.

Research Question 2

I conducted a chi-square test of independence (with Yates's continuity correction) to assess the association between education (< 12 years or > 12 years) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression. The results indicated there was not a significant association between education and reporting seeking mental health treatment, $\chi^2(1, n = 203) = 1.339$, $p = .247$, $phi = .143$. The null hypothesis that there is no association between education and seeking mental health treatment is accepted. Table 3 depicts the frequencies and percentages of the education and seeking mental health treatment variables.

Table 3

Frequencies and Percentages of Education by Mental Health Treatment

	< 12 years		≥ 12 years	
Sought mental health treatment	*n*	*%*	*n*	*%*
Yes	52	43.3	55	67.9
No	68	56.7	28	37.1
Total	120	100.0	83	100.0

Note. $N = 203$.

Research Question 3

I conducted a chi-square test of independence (with Yates's continuity correction) to assess the association between income (< \$15K/year and ≥ \$15K/year) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression. The results indicated there was not a significant association between income and reporting seeking mental health treatment, $\chi^2(1, n = 203) = .309$, $p = .578$, $phi = -.081$. The null hypothesis that there is no association between income and seeking mental health treatment is maintained. Table 4 depicts the frequency and percentages of the income and mental health treatment variables.

Table 4

Frequencies and Percentages of Income by Mental Health Treatment

	< $15K		≥ $15K	
Sought mental health treatment	*n*	*%*	*n*	*%*
Yes	59	65.4	37	57.5
No	70	34.6	37	42.5
Total	129	100.0	74	100.0

Note. $N = 203$.

Research Question 4

I conducted a chi-square test of independence (with Yates's continuity correction) to assess the association between insurance (yes or no) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression. The results indicated there was not a significant association for the participants in this study between having insurance and reporting seeking mental health treatment, $\chi^2(1, n = 203) = .914$, $p = .339$, *phi* = .124. The null hypothesis that there is no association between insurance and seeking mental health treatment was maintained. Table 5 depicts the frequencies and percentages of the insurance and mental health treatment variables.

Table 5

Frequencies and Percentages of Insurance by Mental Health Treatment

	Insurance Yes		Insurance No	
Sought mental health treatment	*n*	*%*	*n*	*%*
Yes	68	48.1	39	53.3
No	54	51.9	42	46.7
Total	122	100.0	81	100.0

Note. $N = 203$.

Research Question 5

I conducted binary logistic regression analysis to examine the likelihood of birth country, education, income, and insurance predicting that respondents would report they had sought mental health treatment. The model contained four independent variables (birth country, education, income, and insurance). The dependent variable was whether the person sought mental health treatment. The null hypothesis was that the full model containing all independent variables would not be able to distinguish between respondents who reported seeking and not seeking mental health treatment. The alternative hypothesis was that the full model containing all independent variables would be able to distinguish between respondents who reported seeking and not seeking mental health treatment.

My analysis using the full model containing the four independent variables provided statistically significant results, χ^2 (4, N = 203) = 12.56, p = .014, indicating the model reliably distinguishes between respondents who report seeking and not seeking mental health treatment. The factors in this model account for between 6.0% (Cox and Snell R^2) and 8.0% (Nagelkerke R^2) of the variance in seeking mental health status, and I was able to correctly classify 63.5% of cases using this model. Education was the only independent variable making a uniquely significant contribution to the model (p = .015, β = .765, OR = 2.15), indicating respondents who reported having a 12th-grade education or higher were slightly over two times (2.15) more likely to report seeking mental health treatment than respondents who reported having a 12th-grade education or lower, controlling for all other variables in the model. Respondents who were born in the US were .604 times more likely to report to report seeking mental health treatment than respondents who were foreign-born, controlling for all other variables in the model. Respondents who reported income ≥ $15K were .878 times more likely to report to report seeking mental health treatment than respondents who reported < $15K income, controlling for all other variables in the model. Finally, respondents who reported having insurance were 1.217 times more likely to report to report seeking mental health treatment than respondents who reported not having insurance, controlling for all other variables in the model.

The -2 Log Likelihood (-2LL) and Hosmer-Lemeshow goodness-of-fit tests provided further tenability of the model. The reduction in the -2LL from 280.82 (constant only model) to 268.28 (full model) offers further evidence of the tenability of the model.

The Hosmer-Lemeshow goodness-of-fit test χ^2 (8, n = 203) = 4.196, p = .839, also supported the tenability the model. Therefore, the null hypothesis that the full model containing all independent variables would not be able to distinguish between respondents who reported seeking and not seeking mental health treatment was rejected. The alternative hypothesis that the full model containing all independent variables would be able to distinguish between respondents who reported seeking and not seeking mental health treatment was accepted. Table 6 depicts the binary logistic regression model statistics.

Table 6

Logistic Regression Predicting Likelihood of Seeking Mental Health Treatment (N = 203)

	B	*SE*	Wald	*df*	*p*	Odds Ratio	*B* 95% CI[a] Lower	Upper
Birth country	-.504	.304	2.749	1	.097	.604	-1.135	.068
Education	.765	.316	5.880	1	.015	2.150	.149	1.450
Income	-.130	.124	1.105	1	.293	.878	-.407	.123
Insurance	.197	.299	.433	1	.510	1.217	-.411	.823
Constant	.181	.378	.229	1	.663	1.198	.612	.953

[a]Bootstrapping 95% CIs using 1000 samples.

Summary

I conducted five statistical analyses to address the five research questions: four chi-square tests of association and one binary logistic regression analysis. The results of the chi-square analyses indicated there was a significant association between birthplace and reporting seeking mental health treatment, χ^2(1, n = 203) = 5.113, p = .024, *phi* = -.169. There were no significant bivariate associations found between education, income,

or insurance and seeking mental health treatment. I also conducted a binary logistic regression analysis to assess the likelihood of birthplace, education, income, and insurance predicting whether respondents would report they sought mental health treatment (RQ5). The analysis using the full model containing the four independent variables provided statistically significant results, χ^2 (4, N = 203) = 12.56, p = .014, indicating that the model distinguished between respondents who reported seeking and those who reported not seeking mental health treatment. Education was the only significant predictor in the model.

Chapter 5: Discussion, Conclusions, and Recommendations

My intent in conducting this quantitative study was to examine the impact of birth country, education, income, and insurance on predicting the likelihood that respondents would report seeking mental health services to treat depression. I analyzed data collected at one research site located in the Border region in West Texas. The data were part of a genetics of bipolar and related disorders study conducted at the Center of Emphasis in Neurosciences at TUHSC from 2011-2015. The results of my study indicate U.S.-born Mexican Americans were more likely than foreign-born Mexican Americans to seek mental health treatment. Additionally, results of the study indicate that Mexican Americans with more than a 12th-grade education grade were two times more likely to report seeking mental health treatment than Mexican Americans who reported a 12th-grade education or lower.

Interpretation of the Findings

Andersen's (1995) behavioral model of health services use was the conceptual framework I used to investigate how the predictive variables of birthplace, education, income, and insurance influence whether Mexican Americans sought professional treatment for depression. This model has been used extensively to predict the utilization of health services for over 30 years (Andersen, 1995). In Andersen's behavioral model, predictor variables are classified into three categories: predisposing, enabling, and need variables.

The purpose of RQ1 was to determine if an association existed between birth country (U.S.-born and foreign-born) and seeking mental health treatment (yes or no)

among Mexican Americans with depression. The results indicated a significant association between birth country and reporting mental health treatment. Within the context of Andersen's behavioral model, birth country was examined as a predisposing characteristic. The data analyzed in this study indicated that a relationship between the birth country of Mexican Americans and seeking mental health treatment for depression exists.

The purpose of RQ2 was to determine if an association existed between completing high school and/or more education and seeking mental health treatment (yes or no) among Mexican Americans with depression. The results indicated there was not a significant association between education level and reporting seeking mental health treatment. Using Andersen's behavioral model, I examined whether completing high school and/or pursuing more education would predict whether Mexican Americans sought mental health treatment. I found the data did not show a relationship between completion of high school and/or more education and seeking mental health treatment for depression. Cooper-Patrick et al. (1999) indicated that a positive correlation existed between education and the utilization of mental health services, while Babitsch et al. (2012) found a significant association between education and the use of health care professionals. The populations examined in the research by Babitsch et al. (2012) included African Americans, Chinese immigrants, and Canadians, so the subjects of that study differed from those in my study. The research population within my study differed from those studied by Babitsch et al., and the results were not aligned.

The purpose of RQ3 was to determine if an association existed between income (< $15K/year and ≥ $15K/year) and seeking mental health treatment for depression by Mexican Americans with depression. Within the context of Andersen's behavior model, income was an enabling characteristic. My analysis of the data showed that no relationship existed between income and reporting seeking mental health treatment by Mexican Americans. Two other research studies with varied parameters with regards to income and population produced results inconsistent with my analysis, as the other researchers found associations between income and service utilization (Babitsch et al, 2012). This discrepancy between the results of my study and the findings of other researchers illustrates that income did not seem to be a predictor for the population selected for this study, but it could be a predictor for groups of people with a different profile, such as people who are younger or who are not Mexican American or are not from the El Paso area. These possibilities merit further research.

The purpose of RQ4 was to determine if an association existed between insurance (yes or no) and reporting seeking mental health treatment (yes or no) among Mexican Americans with depression. The results indicated no significant association between insurance and reporting seeking mental health treatment. Within the context of Andersen's behavioral model, insurance was an enabling characteristic. My analysis of the data showed that no relationship existed between insurance and reporting seeking mental health treatment by Mexican Americans in this study group. One possible explanation of this lack of connection is Babitsch et al.'s (2012) finding that utilization of

mental health services by vulnerable groups may also be impacted by the conditions of the health sector market. This possible connection warrants further investigation.

The purpose of RQ5 was to examine the effect of birth country, education, income, and insurance in predicting the likelihood respondents would report seeking mental health services to treat depression. Education was the only predictor that made a uniquely significant contribution. Mexican Americans who reported having a 12th-grade education or higher were slightly over two times more likely to report seeking mental health treatment than respondents who reported having less than a 12th-grade education. Education is classified as an enabling characteristic in Andersen's behavioral model. This finding underlies the significance of education as it relates to mental health treatment and extends knowledge within the research on Mexican Americans and the effect education has on seeking mental health treatment.

Limitations of the Study

One limitation of the study was its reliance on archived data from one dataset archived at TTUHSC. Use of this data source may not provide a representative picture of all Mexican Americans, both U.S.- and foreign-born, on their treatment for depression. The archived data were part of an epidemiological study conducted in El Paso County in West Texas to gather data on mental and medical illnesses in the region. The participants in the epidemiological study were randomly selected in El Paso County and were representative of the region for the period of 2011-2015. Thus, the results of the study may not be generalizable to the entire population of Mexican Americans in the United States due to differences in the demographics of the participants.

Recommendations

This study had several limitations related to the fact that data on the participants came from an archived database versus data from a primary study. Despite any limitations, this study is important because Mexican Americans are the largest Hispanic subgroup in the United States (Lewis-Fernandez, 2005) and tend to underuse mental health services (Guarnaccia & Martinez, 2002). The authors of existing studies focused on the quality of care and use of mental health services of the Hispanic population made generalizations assuming homogeneity without considering of the internal variability among subgroups (Perez et al., 2009). The fact that my analysis of the data showed an association between birth country and seeking mental health treatment, with U.S.-born Mexican Americans being more likely to seek treatment than foreign-born Mexican Americans, illustrates the importance of considering differences in culture as a factor that may influence health care choices. I hope researchers will build upon this knowledge by using primary data to examine the factors that contribute to the safeguarding effects of native culture and to the negativity associated with acculturation and mental health. Additionally, there is a need to extend the findings of this research study to U.S.-born and foreign-born individuals of other nationalities.

Education was a predisposing variable within this study, and findings indicated participants with $\geq$ 12 years of education were more likely to seek mental health treatment. The focus of this study was on Mexican Americans. Future research should extend to other Hispanic subgroups with a heterogenous approach, as Hispanics tend to

underuse mental health (Guarnaccia & Martinez, 2002) and health professionals must better understand factors affecting this underuse.

Implications

Research has indicated that Hispanics in the United States, the largest minority, are faced with significant disparities in health care and are not receiving adequate mental health care for depression (Lewis-Fernandez, 2005). Hispanics are heterogeneous, and researchers should consider differences among the subgroups when evaluating mental health needs (Lewis-Fernandez, 2005). Researchers studying the quality of care and use of mental health services of Hispanics in past decades often made generalizations and inferences without regard to variability among subgroups (Perez et al., 2009). The U.S. Surgeon General's report *Mental Health: Culture, Race, and Ethnicity* (U.S. Department of Health and Human Services, 2001) identified disparities in mental health treatment for Hispanics and provided direction for future research (Lopez et al., 2012). This resulted in studies that documented disparities; however, there is a need for research focusing on the reduction and elimination of disparities (Lopez et al., 2012). It is imperative to view the Hispanic population from a heterogeneous perspective to examine factors that contribute to the use of mental health services in order to focus on reducing and eliminating existing disparities. Within this research, I found that participants with ≥ 12 years of education were more likely to seek mental health services. This finding shows the necessity of further investigating the reasons individuals with < 12 years of education are not seeking treatment and to initiate conversations within the community to address this need.

Conclusion

Mexican Americans are the largest Hispanic subgroup in the United States and tend to underuse mental health services. The purpose of this study was to examine the impact birth country, education, income, and insurance have on seeking mental health treatment by Mexican Americans, using archived data on 203 participants in a previous study. The participants had been diagnosed with depression based on their responses to the MINI. My analysis of this data showed that education was a significant variable; participants with 12 years or more of education were likely to seek mental health treatment for depression. In addition, a significant association between birth country and seeking mental health treatment was noted. However, I did not find significant associations between education, income or insurance and seeking mental health treatment. The implications for positive social change include the potential to bridge the gap in knowledge by considering internal variability of Hispanics when focusing on the impact birth country, education, income, and insurance have on the selection and utilization of treatment by Mexican Americans with depression.

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