UCLA
UCLA Electronic Theses and Dissertations

Title
Socio-Cultural Determinants of Mental Health Service Utilization Among Latinos in the United States

Permalink
https://escholarship.org/uc/item/249952d8

Author
Barreras, Joanna Lizeth

Publication Date
2019

Peer reviewed|Thesis/dissertation

eScholarship.org Powered by the California Digital Library
University of California

UNIVERSITY OF CALIFORNIA

Los Angeles

Socio-Cultural Determinants of Mental Health Service Utilization among Latinos in the United States

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Social Welfare

by

Joanna Lizeth Barreras

2019

© Copyright by

Joanna Lizeth Barreras

2019

ABSTRACT OF THE DISSERTATION

Socio-Cultural Determinants of Mental Health Service Utilization Among Latinos in the United States

by

Joanna Lizeth Barreras

Doctor of Philosophy in Social Welfare

University of California, Los Angeles, 2019

Professor Todd M. Franke, Chair

This dissertation study contributes to the research on Latino mental health service utilization by examining the determinants of utilization of mental health services, while considering Latino socio-cultural factors. Using the Andersen Behavioral Model of Health Service Utilization (BMHSU) as a theoretical framework, secondary data analysis was conducted using the National Latino and Asian American Study (NLAAS), a nationally representative household survey, focusing on mental disorders and mental health service utilization. Results indicate that only 9% of the Latino population surveyed, including those with a depressive, anxiety, substance use, and/or behavioral disorder, report having used at least one source of mental health service. The findings highlight the BMHSU determinants of mental health service utilization and the need for

research to increase our understanding of the socio-cultural barriers and facilitators to using mental health services among Latinos in the United States.

The dissertation of Joanna Lizeth Barreras is approved.

Ailee Moon

Denise A. Chavira

Diane S. de Anda

Todd M. Franke, Committee Chair

University of California, Los Angeles

2019

DEDICATION

I dedicate this dissertation to my parents, Alicia and Juan Jose Barreras,

my son, Jacob

my siblings, Daisey, Alma Alicia, and Juan Diego,

and my nieces, Selena Alisa and Luna Alicia

¡Con ganas todo se puede!

TABLE OF CONTENTS

Background 1

Problem Statement 2

Purpose of the Study 4

Dissertation Aims 5

Conceptual Framework 6

Research Questions 7

Conclusion 8

CHAPTER 2: LITERATURE REVIEW 9

Overarching Framework 9

Literature Review 11

Predisposing Factors 11

Enabling Factors 13

Need Factors 20

Conclusion 21

CHAPTER 3: METHODS 22

Research Design 22

Population and Sample 23

Procedures 23

Instrumentation 24
Dependent Variable 24
Independent Variables 26

Data Analysis 30

Conclusion 31

CHAPTER 4: RESULTS 32

Demographics 32

Utilization of Mental Health Services and BMHSU Factors 40

Type of Mental Health Service Used and BMHSU Factors 46

Latino Subgroups and Predictors of Mental Health Service Utilization..................................48

Conclusion..................................49

CHAPTER 5: DISCUSSION 50

Summary..................................50

Limitations and Strengths 56

Social Work Practice and Policy Implications 57

Future Research Directions 58

REFERENCES..................................60

LIST OF FIGURES

Figure 1. Conceptual Model Applying the Behavioral Model of Health Service Use to Mental Health Service Utilization 6

LIST OF TABLES

Table 1. Summary of Descriptive Characteristics for Latinos in the NLAAS 2002-2003 Sample. 33

Table 2. Bivariate Association Between Predisposing, Enabling, and Need Factor and Mental Health Service Utilization (Unweighted) 37

Table 3. Predisposing Factors and Mental Health Service Utilization using Logistic Regression (Weighted) 40

Table 4. Enabling Factors and Mental Health Service Utilization using Logistic Regression (Weighted) 41

Table 5. Need Factors and Mental Health Service Utilization using Logistic Regression (Weighted) 43

Table 6. Predisposing, Enabling, and Need Factors and Mental Health Service Utilization using Logistic Regression (Weighted) 44

Table 7. Type of Mental Health Service Used and BMHSU Factors using Multinomial Logistic Regression 47

ACKNOWLEDGEMENTS

First and foremost, I offer my sincerest gratitude to my chair, Dr. Todd Franke, who has supported me throughout my dissertation with his knowledge and patience. I am forever grateful for his support, guidance, and sincere confidence in me. In addition, I thank Dr. Diane de Anda for giving me her time and providing me the safe space to process life during my doctoral journey—thank you for being supportive in more ways than I could imagine. I thank Dr. Ailee Moon and Dr. Denise Chavira for their time, valuable feedback, and encouragement. Thank you to the Bridges Program and Dr. Pauline Agbayani for planting the seed of a doctoral degree in my heart. Thank you to Dr. Ian Holloway for all of the positive encouragement and numerous opportunities. Thank you to Tanya Youssephzadeh for always having your door and heart open for me—you are the most amazing Graduate Advisor! Thank you to Lia, Kristina, Sara, Ashleigh (from my cohort), and Carol (from our buddy program) for your friendship and unconditional support.

I thank my family, who has been supportive throughout all of my studies. I thank my parents: Alicia and Juan Jose, my siblings: Daisey, Alma Alicia, and Juan Diego, and my son: Jacob. Thank you for keeping me sane, for believing in me, and for loving me so much! Thank you to my grandparents: Tita (Rafaela), Güelito (Librado), Mami Lena, and Papi Pedro for always praying for me! Lord knows, I could not have done this without you all.

Finally, I thank God for giving me the strength, the courage, the "*ganas*" to accomplish all that I have. I am blessed with an amazing support system and limitless opportunities.

VITA

Joanna Lizeth Barreras

EDUCATION

Expected
2019 **Ph.D. Social Welfare**, University of California, Los Angeles
Dissertation: *Socio-Cultural Determinants of Mental Health Service Utilization among Latinos in the United States*
Committee: Todd Franke (Chair), Ailee Moon, Diane De Anda, Denise Chavira

2012 **M.S.W.** (Forensic Social Work concentration) California State University, Los Angeles

2010 **B.A.** Psychology, (Criminal Justice minor) California State University, Long Beach

PUBLICATIONS

Barreras, J.L., MacCarthy, S., Linnemayr, S. (2019). "We have a stronger survival mode" - Exploring knowledge gaps and the culturally sensitive messaging of PrEP among Latino men who have sex with men and Latina transgender women in Los Angeles, CA. *AIDS Care.* [Epub ahead of print] doi: 10.1080/09540121.2019.1601669. PMID: 30939901

Linnemayr, S., MacCarthy, S., Wagner, Z., **Barreras, J.L.**, Galvan, F.H. (2018). Using behavioral economics to promote HIV prevention for key populations. *Journal of AIDS & Clinical Research. 9*(11): 780.doi: 10.4172/2155-6113.1000780. PMCID: PMC6428081

Linnemayr, S., MacCarthy, S., Kim, A., Giguere, R., Carballo-Dieguez, A., **Barreras, J.L.** (2018). Behavioral economics-based incentives supported by mobile technology on HIV knowledge and testing frequency among Latino/a men who have sex with men and transgender women: Protocol for a randomized pilot study to test intervention feasibility and acceptability. *Trials. 19*(1): 540. doi:10.1186/s13063-018- 2867-1. PMCID: PMC6173939

RESEARCH EXPERIENCE

2016-Present **Research Associate***,* Kaiser Permanente Department of Research and Evaluation
Principal Investigator: Rulin Hechter
Responsibilities: Support a prospective investigation of the risks of opioid misuse, abuse, and addiction among patients treated with extended-release/long acting (ER/LA) opioids for the treatment of chronic pain as a recruiter and interviewer with a mental health background using the Psychiatric Research Interview for Substance and Mental Disorders (PRISM-5-Op).

2014-2017 **Staff Adjunct**, RAND Corporation
Principal Investigators: Sebastian Linnemayr, Sarah MacCarthy, Frank Galvan, and Alex Carballo-Dieguez
Responsibilities: Assisted with the development and implementation of a mobile technology based (text messages) and behavioral economics (lottery) supported HIV prevention intervention to increase engagement with HIV prevention information and improve testing frequency among Latino men who have sex with men (MSM) and Latina transgender women (TGW).

2014-2015 **Graduate Student Researcher**, UCLA Department of Social Welfare
Principal Investigator: Ian Holloway
Responsibilities: Contributed as a bilingual research team member with interviews, grant writing, and the launching of a pilot study focusing on evaluating the feasibility of a multiple dimensional mental health risk-screening tool to be used in primary care settings.

TEACHING EXPERIENCE

2015-2019 **Adjunct Lecturer**, California State University, Los Angeles, Public Health Department, Public Health: Health and Wellness
2015-2019 **Graduate Student Instructor**, UCLA Department of Social Welfare, Social Welfare: Biomedical, Social, and Policy Frontiers in Human Aging
2016 **Teaching Assistant**, UCLA Department of Social Welfare, Social Welfare: Dynamics of Human Behavior (Adult Psychopathology)

PRACTICE EXPERIENCE

2017-Present **Associate Director of Research and Evaluation**, Bienestar Human Services, Inc., Los Angeles, CA
Collaborate with academic and public health organizations on research projects focusing primarily on the wellbeing of Latinx population.

2015-2016 **Alcohol and Other Drugs Prevention Program Director**, People Coordinated Services, South Los Angeles, CA
Provide alcohol and other drugs prevention services to youth and parents through evidence-based programs in the South Los Angeles community.

LANGUAGES

Native Spanish (written and verbal communication)

CHAPTER 1: **INTRODUCTION**

Latinos are a rapidly growing population in the United States (U.S. Census Bureau, 2016), who are at risk for common mental health problems (National Alliance for Hispanic Health, 2001) and are affected by mental health disparities (Alegría et al., 2008; Wang et al., 2005), which can impact the utilization of mental health services (Alegría et al., 2002; Steele, Dewa, & Lee, 2007). This dissertation focuses on the utilization of mental health services, specifically among Latinos. It seeks to explain why underutilization of mental health services is a social problem for this population. The review of the literature focuses on theoretical and empirical considerations regarding the utilization and underutilization of mental health services among Latinos. Using the National Latino Asian American Study (NLAAS), this study explains the various factors identified in the literature as contributing to the use of mental health services examined individually and collectively with regard to understanding mental health disparities and to improving mental health service utilization among Latinos and Latino subgroups.

Background

In a given year, approximately 18.5 percent of adults (43.8 million people) in the United States experience some type of mental illness (National Institute of Mental Health, 2015). Specifically, 6.9 percent of adults (16 million people) have had at least one major depressive episode, 18.1 percent of adults have experienced an anxiety disorder (e.g., posttraumatic stress disorder, obsessive-compulsive disorder and specific phobias), 20.2 million people have experienced a substance use disorder, and 10.2 million of those with a substance use disorder have had a co-occurring mental illness (National Institute of Mental Health, 2015). However, recent research found that a substantial number of adults with mental illnesses did not receive

treatment (any mental illness, 62%; serious mental illness, 41%) and concluded that there was an unmet need for treatment (any mental illness, 21%; serious mental illness, 41%) (Walker, Cummings, Hockenberry, & Druss, 2015). This underutilization of mental health services is alarming given that mental disorders, such as depression, are major causes of disability worldwide (World Health Organization, 2008). Moreover, as part of the Global Burden of Disease project, epidemiologists Murray and Lopez predicted that depression will be one of the primary causes of disability in the world by the year 2020 (Murray & Lopez, 1996 as cited in Centers for Disease Control and Prevention, 2012). It is not uncommon for someone with an anxiety disorder to also suffer from depression or vice versa. Nearly one-half of those diagnosed with depression are also diagnosed with an anxiety disorder. Also, it is not uncommon for someone with anxiety or depression to have a substance use disorder. According to the Anxiety and Depression Association of America (ADAA) about 20 percent of Americans with anxiety or depression have an alcohol or other substance use disorder, and about 20 percent of those with an alcohol or substance use disorder also have anxiety or depression (2018).

Problem Statement

Latinos[1] are no exception to such predictions and rates. Latinos are one of the most rapidly growing populations in the United States, and the National Alliance for Hispanic Health (2001) has identified this group as being at high-risk for mental health problems, specifically for depression, anxiety, and substance use disorders (National Alliance for Hispanic Health, 2001). Despite Latinos being identified at high risk for mental health problems, research has highlighted gaps in utilizing mental health services. With regard to depression, a national study found that

[1] Researchers have used the terms “Latinos” and “Hispanics” interchangeably, however the term “Latinos” is preferred and used throughout this paper.

36% of Latinos with depression received care compared to 60% of their White counterparts (Alegría, et al., 2008). Among Latinos with anxiety and depression, only 24% received appropriate care (Young, et al., 2001). Literature on substance abuse treatment among Latinos suggests that Latinos have greater or equal access to treatment compared to their White counterparts (Daley, 2005; Niv and Hser, 2006); however, substantial literature also documents that Latinos are less likely to seek treatment and receive fewer services (Jerrell & Wilson, 1997; Rebach, 1992; Wells, Klap, Koeke, & Sherbourne, 2001). Of even greater concern, fewer than one in 11 native-born Latinos with a mental disorder initiate contact with a mental health specialist, and fewer than one in five make contact with a general health care provider for their symptoms (United States Department of Health and Human Services, 2001). These ratios are even smaller for Latino immigrants seeking mental health services (United States Department of Health and Human Services, 2001). These are just a few examples of many mental health disparities[2] affecting Latinos in contrast to the U.S. population as a whole.

The consequences of untreated mental disorders are numerous. Research has found that individuals with mental illnesses experience a loss of financial independence and, have significantly higher rates of unemployment compared to the general public (Baron & Salzer, 2002). Moreover, the family system may be burdened by loss of wages and by the demands of caring for the untreated mentally ill individual, affecting immediate family members including children. In addition, research has demonstrated a positive relationship between mental illness and other social problems, such as, crime, drug use and homelessness (Draine, Salzer, Culhane,

[2] Generally speaking, a disparity can be defined as a difference in which disadvantaged social groups (e.g., ethnic minorities) experience worse mental health or greater health risks than more economically advantaged social groups (Braveman, 2006).

& Hadley, 2002; Drake & Brunette, 1998). As a consequence, the social welfare system may be unduly burdened with the cost to provide for afflicted individuals and/or families.

Purpose of the Study

In order to understand mental health utilization and how to reduce mental health disparities for this population adequately, literature must also explore possible differences among Latino subgroups. For instance, although people of Mexican origin are the largest group within the Latino population in the United States (United States Census Bureau, 2011), relatively little is known about their utilization of mental health services. The extant evidence largely ignores cultural variation and heterogeneity across and within Latino subgroups (United States Department of Health and Human Services, 2001). For example, the incidence of mental illness and utilization of mental health care services among Mexicans in the United States may differ from the incidence and utilization of mental health care services among Latinos from Cuban and Puerto Rican backgrounds. Furthermore, generational and nativity differences within Latino subgroups may yield different patterns in the prevalence of mental illness and utilization of mental health care services. For instance, foreign nativity among Latinos may be a protective factor for depression (Burnam, Hough, Karno, Escobar, & Telles, 1987). Others have reported that long-term residency in the United States among Mexican immigrants, in particular (as compared with their immigrant counterparts who have been in the country for shorter periods of time), is associated with poorer mental health (Horevitz & Organista, 2012). Overall, U.S. born Mexican-Americans and long-term immigrants (living in the U.S. for 13 years or longer) have poorer mental health when compared to short-term immigrants (living in the U.S. for less than 13 years) (Vega et al., 1998). The reasons for this so-called “immigrant health paradox” (Burnam, et al., 1987; Horevitz & Organista, 2012) remain perplexing. Thus, the field lacks a unique

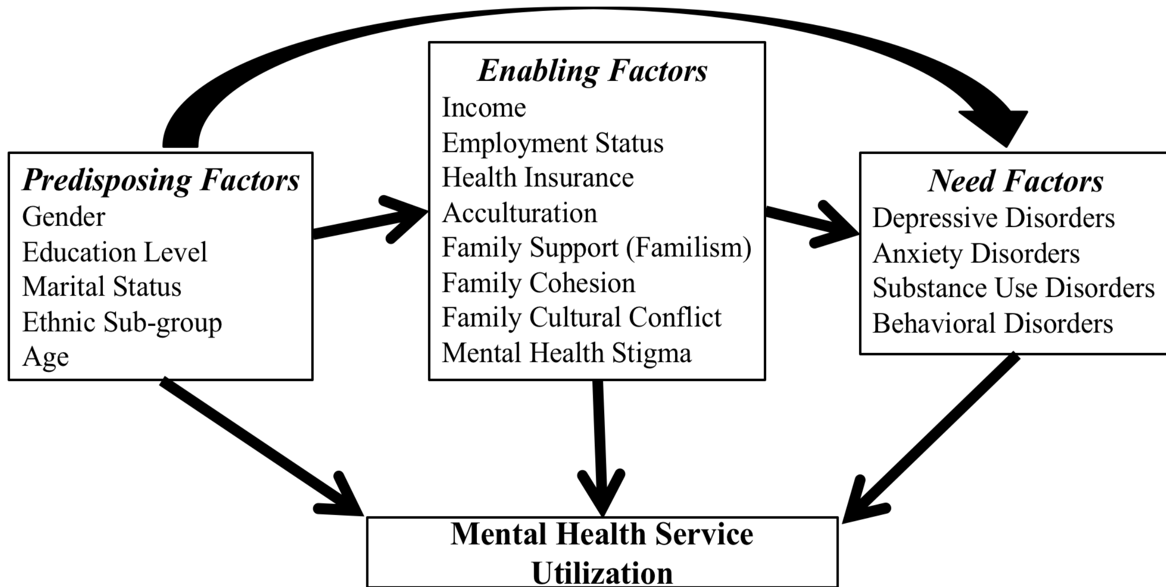
understanding of the issues and problems surrounding Latino and Latino subgroups' mental health service utilization. Research that focuses on Latino subgroups that takes into account all the factors impacting mental health service utilization provides knowledge to improve community outreach, agency policies and practice, service access and utilization, and ultimately, a reduction in mental health disparities for this at-risk population.

Dissertation Aims

This dissertation examines Latino subgroup differences around the most common mental health problems and mental health service utilization, while considering socio-cultural factors. Figure 1 below presents the conceptual framework guided by the Andersen and Newman Behavioral Model of Health Service Use (Andersen, 1995; Andersen & Newman, 1973), which has been used to explain the determinants of utilization of health services. These determinants of health service utilization have been divided into three factors: predisposing (e.g., demographics) enabling (e.g., accessibility, affordability), and need (e.g., perceived or evaluated need of care). This model has been used extensively to explain the determinants of utilization of health care services, including those for mental health needs among Latinos (Bradley, et al., 2002; González et al., 2010; Keyes, et al., 2012; Lumansoc, 2011; Van Beljouw, Verhaak, Cuijpers, Van Marwijk, Penninx, 2010). This model also guides the research questions presented below.

Conceptual Framework

Figure 1. Conceptual Model Applying the Behavioral Model of Health Service Use to Mental Health Service Utilization



Based on factors postulated by Andersen's Behavioral Model of Health Services Use (BMHSU), Latinos experiencing common mental health problems may generate unique pathways to utilization of services, given cultural and socioeconomic factors. To examine how predisposing, enabling, and need factors may affect use of mental health services among Latinos, this dissertation looks at different pathways informed by the aforementioned theory and conceptual framework and the prominent mental health services literature to determine significant predictors of mental health status and use of services that service providers need to consider when working with Latino patients in mental health care settings. In particular, this dissertation focuses on common mental health problems: depressive disorders, anxiety disorders, substance use disorders, and behavioral disorders. Furthermore, it incorporates specific group characteristics that are known to be important in the Latino culture: familism, family cultural conflict, and acculturation.

Drawing from the BMHSU, the determinants in the conceptual model consist of predisposing, enabling, and need factors. Predisposing factors in this dissertation include gender, education level, marital status, Latino ethnic sub-group, and age, which are conceptualized to influence service use directly and indirectly via need factors as depicted in the conceptual framework in Figure 1. Enabling factors are conceptualized to be influenced by predisposing factors and include household income, employment status, health insurance, acculturation, family support (familism), family cohesion, family cultural conflict, and mental health stigma and influence the use of mental health services. Need factors are conceptualized to be influenced by predisposing and enabling factors, and to influence the use of mental health services. Having a need, has been documented as the strongest predictor of service utilization (Andersen, 1995), including mental health service utilization among Latinos (Fortuna, Porche, & Alegría, 2008; Lee & Matejkowski, 2012).

Research Questions

Specifically, this dissertation explores the following research questions for mental health service utilization:

1.) Using the Anderson's BMHSU, do **predisposing, enabling**, and **need**, factors predict ***mental health service utilization*** among Latinos?

   a. What **predisposing** factors are determinants of mental health service utilization among Latinos?

   b. What **enabling** factors are determinants of mental health service utilization among Latinos?

c. Using the Anderson's BMHSU, is having an evaluated mental health **need** a determinant of mental health service utilization among Latinos?

d. Using the Anderson's BMHSU, are **predisposing, enabling**, and **need** factors, when considered together, determinants of mental health service utilization among Latinos?

2.) In addition, using the Anderson's BMHSU, do **predisposing, enabling**, and **need**, factors predict the ***type(s)*** of service provider utilized for mental health by Latinos?

3.) Using the Anderson's BMHSU, are there interactions between Latino subgroups and the **predisposing, enabling**, and **need** factors that predict mental health service utilization?

Conclusion

In summary, current literature on mental health service utilization does not address cultural variation and heterogeneity across and within Latino subgroups. This dissertation aims to fill the gap in knowledge by focusing on the interplay between the internal and external factors, as guided by the BMHSU, and their impact on mental health service utilization among Latino subgroups. The next section describes the BMHSU in more detail and presents a review of the literature available on the determinants of mental health service utilization among Latinos.

CHAPTER 2: **LITERATURE REVIEW**

This chapter presents a review of the literature guided by theory regarding the determinants of mental health service utilization. First, the overarching framework which elucidates reasons for underutilization of mental health services by Latinos is discussed. Then, the Andersen's Behavioral Model of Health Services Use (BMHSU) is presented to explain determinants of utilization of mental health services, followed by the literature on factors that impact utilization of mental health services among Latinos in the United States. Specifically, this section reviews the literature on (a) predisposing factors (e.g., gender, education level, marital status, Latino ethnic subgroup, and age), (b) enabling factors (e.g., household income, employment status, health insurance, acculturation, Latino cultural factors related to family, and mental health stigma); and (c) need factors (e.g., experiencing depressive disorders, anxiety disorders, substance use disorders, and/or behavioral disorders) as they relate to Latinos' utilization of mental health services.

Overarching Framework

There are many reasons why Latinos underutilize mental health services. A number of theories have been proposed to explain the factors attributed to the use of mental health services. The BMHSU has been perceived as the dominant approach to studying health services use. Furthermore, the literature has focused on external and internal barriers that limit and prevent mental health care utilization in Latino communities. External barriers to mental health care utilization include lack of health insurance, language barriers, discrimination from the system, lack of information about services (Guarnaccia, Martinez, & Acosta, 2005), and cost of services (Kouyoumdjian, Zamboanga, & Hansen, 2003). Internal barriers include perception of mental illness, lack of recognition of mental health problems, a self-reliant attitude, the stigma of having

a mental illness, and the associated stigma of seeing a mental health specialist in their community (Guarnaccia et al., 2005; Kouyoumdjian et al., 2003). Cultural factors may also play a role in the utilization of mental health services (Williams & Jackson, 2005 as cited in Cabassa, Lester, & Zayas, 2006). These barriers and factors are difficult to separate and can be culturally specific or not.

Theoretical Considerations

The Andersen and Newman Behavioral Model of Health Service Use (Andersen, 1995; Andersen & Newman, 1973) has been used to explain the factors that influence utilization of care. These factors are divided into three categories which impact health service utilization: predisposing factors (e.g., demographics and mental health beliefs), enabling resources (e.g., social support, accessibility and affordability of mental health care services), and need (e.g., perceived need or evaluated/actual need for mental health care). The BMHSU has been used for many years by many researchers to explain the determinants of health care utilization, such as for untreated anxiety and depression (Van Beljouw et al., 2010), for long-term health care utilization while considering psychosocial factors (Bradley et al., 2002), and for self-reported mental disorders (Lumansoc, 2011). Ronald M. Andersen first developed this model in the 1960's, and it has been since revisited and revised. The model initially focused on the family as the unit of analysis but the model was subsequently modified to employ the individual as the unit of analysis. In the 1970's, Andersen integrated the external environment (e.g., the health care system) to the BMHSU to better understand and explain the utilization of health care services (Andersen & Newman, 1973). This model helps explain determinants that contribute to the utilization or non-utilization of mental health services among Latinos with a mental health

problem and provides the ability to disseminate an understanding of factors and barriers impacting this at-risk growing population.

Literature Review

A review of the literature suggests there are several reasons for the underutilization of mental health services among Latinos. Those reasons can be broken down into two major groups: external factors and internal factors. External factors can be described as factors that come from the outside of the person, such as socioeconomic status, discrimination, and language barriers. Internal factors can be described as factors that come from within a person, such as perception, culture, and knowledge. The following sections discuss these factors and the relationships between them in greater depth using the determinants of health care utilization outlined in the BMHSU, predisposing, enabling, and need factors.

Predisposing Factors

A variety of predisposing factors contribute to the utilization of mental health services, gender, age, education level, marital status, generational status, and ethnicity. Females, regardless of race, utilize mental health care services at higher rates than their male counterparts (Substance Abuse and Mental Health Services Administration [SAMHSA], 2013). Research has noted that females are more likely to seek professional mental health services because they have a help-seeking attitude, measured by using the Inventory of Attitudes toward Seeking Mental Health Services, which is comprised of a 24-item attitude measure using three subscales: 1) Psychological Openness, measuring openness to acknowledging mental health problems and the likelihood of seeking help for them; 2) Help-seeking Propensity, measuring the willingness and ability to seek help; and 3) Indifference to Stigma, measuring concerns about how others would

react to them seeking help for mental health problems, compared to males (Mackenzie, Gekoski, & Knox, 2007).

When taking age into consideration, SAMHSA (2013) reports that there are higher prevalence rates of mental illness among adults aged 26 to 49, followed by adults 18 to 25 years of age, and then by those aged 50 or older (SAMHSA, 2013). However, mental health service utilization varies depending on the mental health problem, in general, adults ages 18 to 25 years old comprise the group with the greatest likelihood of experiencing a major depressive episode, compared with those who are 26 to 49 years of age 50 years of age or older. However, adults 50 years or older are more likely to receive mental health care compared to the younger age groups (SAMHSA, 2013). It has been noted that older adults are more likely to have favorable intentions to seek help than younger adults (Mackenzie et al., 2007). Overall, age has been found to influence the use of mental health services. However, research focusing on Latinos has noted some age differences: some studies have indicated that young Latino adults use more mental health services (Portes, Kyle, & Eaton, 1992; Vera et al., 1998), while other studies have found that older Latinos use more services (Alegría et al., 1991; Pescosolido, Wright, Alegría, & Vera, 1998; Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999). However, these studies have not accounted for acculturation or generational differences.

Another predisposing factor is education, with higher education found to be a determinant of mental health service utilization among Latinos (Gonzalez, Alegría, Prihoda, Copeland, & Zeber, 2011; Ojeda & McGuire, 2006). Specifically, studies have highlighted that individuals with lower education levels are more likely to receive mental health care in general medical settings, compared to professionals in the mental health specialty field (Gonzalez et al., 2011). With regard to marital status, unmarried individuals in general are more likely to utilize

mental health services compared to their married counterparts (Chang, Natsuaki, & Chen, 2013; Leaf, Livingston-Bruce, Tischler, Freeman, Weissman, & Myers, 1988; Peifer et al., 2000). With regard to nativity, research has found that third or later generation Latinos (U.S. born and both parents born in the U.S.) have higher rates of use of mental health care utilization (considering, contributing enabling factors—e.g., English proficiency and higher education levels) (Abe-Kim, et al., 2007), highlighting that higher acculturation levels are associated with worse health and mental health; therefore, a higher need to use services (Alegría et al. 2002; Chen & Vargas-Bustamante 2011; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005; Wells, Golding, Hough, Burnam, & Karno, 1989). Literature has also noted ethnic sub-group differences among Latinos with regard to mental health care service utilization. When compared with Mexicans, Puerto Ricans and other Latinos use mental health care services at higher rates and Central and South Americans use care at similar rates (Harris, Edlund, & Larson, 2005).

Enabling Factors

Enabling factors that impact mental health service utilization among Latinos are income, employment status, lack of health insurance, language, acculturation, familism, family cultural conflict, and mental health stigma.

Socioeconomic Status

The majority of Latinos face socioeconomic challenges, being at risk for living in poverty, having lower educational achievement levels compared to the non-Hispanic White population, and having high unemployment rates (Kouyoumdjian et al., 2006). Being of lower socioeconomic status has been associated with being more likely to have a mental illness and with being less likely to utilize mental health care services. Specifically, in the United States, those with higher incomes tend to receive mental health care more often than those with lower

incomes (Katz, Kessler, Frank, Leaf, & Lin, 1997). Moreover, employment status is an important predictor of mental health utilization among Latinos. Many Latinos are employed by sectors of the labor market that are less likely to provide stable employment or insurance coverage (Bennefield, 1998 as cited in Vega & Lopez, 2001), thereby, reducing their likelihood of having stable income and the ability to afford health insurance and/or mental health care services.

Health Insurance

Numerous studies have documented lack of health insurance as a significant access and utilization barrier to mental health care, especially for Latinos (O. Carrasquillo, A. Carrasquillo, & Shea, 2000; Hargraves & Hadley, 2003; R. Treviño, F. Treviño, Medina, Ramirez, & Ramirez, 1996; Vega & Lopez, 2001; Woodward, Dwinell, & Arons, 1992). In 2008, 30.7% of Latinos in the United States lacked health care insurance (at 14.6 million) (U.S. Office of Minority Health and Health Disparities, 2010). Unfortunately, the available literature does not specifically address if mental health care coverage is included in health insurance plans. The majority of the information on health insurance available focuses on health care services. Even with the implementation of the Affordable Care Act (ACA) of 2010, Latinos continue to have problems accessing and utilizing mental health care services (Ortega, Rodriguez, & Vargas Bustamante, 2015).

It is evident through numerous studies that the Latino population underutilizes mental health care services when compared to the White population (Alegría et al., 2002; Berdahl & Torres Stone, 2009; Harris et al., 2005; Hough, et al., 1987; Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1998, Wells et al., 2001). Ronald Andersen et al. (1981) found that health insurance coverage among Latinos is significantly impacted by socioeconomic status. Specifically among Mexican-Americans, research has documented that the deciding factor for utilizing health care

was insurance coverage (Treviño et al, 1996). Overall, studies report that Latinos without health insurance are less likely than insured Latinos to utilize health services (Andersen, Lewis, Giachello, Aday, & Chiu, 1981; Berdahl & Torres Stone, 2009; Trevino, Moyer, Burciaga Valdez, & Stroup-Benham, 1992 as cited in Kouyoumdjian et al., 2003; Vega et al., 1998). Hargraves and Hadley (2003) believe that lack of health insurance is specifically the most important factor in Latino and White differences in health care access and utilization. Several researchers believe that if Latinos were able to have equal levels of insurance coverage with their White counterparts, a significant portion of the disparities in access to care would be reduced (Hargraves and Hadley, 2003; Zuvekas & Taliaferro, 2003). Moreover, differences have been found within the Latino population. Specifically, among Latino subgroups, Mexicans are the most disadvantaged group with only 59% of Latinos of Mexican origin having health insurance coverage compared with 72 percent of non-Mexican Latinos (Puerto Ricans, Cubans, Other Latino subgroups) (Vargas Bustamante, Fang, Rizzo, & Ortega, 2009).

Language

Scholars have consistently identified limited English proficiency as a barrier to health care and mental health care access and utilization (Fiscella, Franks, Doescher, & Saver, 2002; Guarnaccia et al., 2007; Kouyoumdjian et al., 2003; Sentell, Shumway, & Snowden, 2007; Timmins, 2002; Wilson Chen, Grumbach, Wang, & Fernandez, 2005). Language, in particular, the ability to communicate, understand, and or feel understood by health practitioners is a key factor in mental health care (Flores, 2006, Kouyoumdjian et al., 2003; Sentell, Shumway, & Snowden, 2007). Most mental health treatments involve a dialogue between the practitioner and the client. Limited English proficiency affects care, medicinal use, diagnosis, and other health related aspects (Flores, 2006). Often, Spanish-only speaking patients rely upon others such as

children, non-fluent professionals, or non-clinical employees to interpret; as a result, the trust, rapport, and understanding between the provider and the patient is negatively impacted (Ginsberg et al. 1995 & Schmidt, Ahart, and Schur 1995 as cited in Jacobs, Chen, Karliner, Agger-Gupta, & Mutha, 2006).

Communication between health care providers and patients is hindered when the provider and the client do not speak the same language (Fernandez, et al., 2004; Kouyoumdjian et al., 2003). Latinos who communicate primarily in Spanish are more dissatisfied with care when the care provider is non-Spanish-speaking (Alegría et al., 2008; Fernandez et al., 2004; Morales, Cunningham, Brown, Liu, & Hays, 1999). Research demonstrates that there is a significant need to improve access and utilization of care among populations who encounter language barriers. Furthermore, researchers suggest that providing language assistance services can reduce language barriers (Kim et al., 2011).

Cultural Factors

In order to understand the enabling factors that are present among Latinos, it is important to understand the known values and characteristics of the Latino culture. Furthermore, it is important to recognize that many Latinos come from other countries and go through an acculturation process as they reside in the United States that may influence their values and behaviors.

It is known for Latinos to share a collectivist culture, wherein they define their identity in "family, ancestors, community, ethnicity, spirituality, environment and other collective contexts" (Comas-Diaz, 2006, p. 437). Due to this collectivist culture, it is possible for Latinos to seek help from their family or from spiritual leaders instead of professional mental health services. Some Latinos share unique group values and norms such as a familism and fatalism. This culture

often clashes with the mainstream individualist culture, which emphasizes independence. According to Comas-Diaz (2006), the clash between the two cultures arises during the acculturation process of Latinos to the United States. Below the impact of acculturation on the mental health use of Latinos is discussed. Also discussed is the influence of family cultural conflict within the family, familism, and stigma.

Acculturation

Acculturation has been found to impact general health among Latinos (Buscemi, Williams, Tappen, & Blais, 2012; Jimenez et al., 2012; Johnson, Carroll, Fulda, Cardarelli, & Cardarelli, 2010). Acculturation is described as the process of cultural, psychological and subsequent behavioral change experienced by individuals as a result of two or more cultural groups coming into contact (Berry, 2005; Redfield, Linton, Herskovits, 1936). The growth of Latino immigrants in the United States has precipitated many studies examining the relationship between acculturation and health among this ethnic group. Although evidence suggests that acculturation leads to negative overall health behaviors (e.g. substance abuse and poor mental health), it has been found to lead to a greater use of health services and a more positive self-perception of health among Latinos (Lara et al., 2005). The health literature suggests that level of acculturation can introduce health risk factors (Ebin, Sneed, Morisky, Rotheraam-Borus, Magnusson, & Malotte, 2000; Farrelly, Cordova, Huang, Estrada, & Prado, 2013; Schwartz et al., 2011) as well as protective health factors (Mainous, et al., 2006; Schwartz, et al., 2011) depending on the health outcome examined (Lara et al., 2005).

During the last two decades, research has found that as the acculturation level of Latinos in the United States increases, physical health and mental health status decline (Acevedo-García, Soobader, & Berkman., 2007; Adler & Rehkopf, 2008; Carter-Pokras et al. 2008; Lara et al.,

2005; Waldstein, 2008). This phenomenon of health deterioration has been labeled as the acculturation paradox and is explained as health deteriorating (instead of improving) due to the adaptation and adjustment to an American culture and lifestyle (given that, recent Latinos immigrants with lower socio-economic status have been found to have better health than their non-Latino White counterparts) (Ceballos & Palloni, 2010). For instance, research suggests that Mexican immigrants who have recently migrated to the U.S. have better mental health than that of U.S. born citizens (Burnam et al., 1987; Vega, et al., 1998). U.S. born and long-term Latino residents have higher rates of mental disorders (affective disorders, anxiety disorders, and chemical use and dependency) when compared to Latino immigrants who have fewer years in the U.S. (National Council of La Raza, 2005). Furthermore, compared to Mexican immigrants, U.S. born Mexican Americans had higher lifetime prevalence rates across five mental disorders: major depression, dysthymia, phobia, alcohol, and drug dependency (National Council of La Raza, 2005). Differences have been attributed to structural and cultural factors such as familism, traditions, and perceptions of health (Agbayani-Siewert, Takeuchi, & Pangan, 1999).

With regard to mental health service utilization, a study focusing on Mexican-Americans found that Mexican Americans who were less acculturated had lower probabilities of utilizing care than those who were more acculturated; this was true for physical and mental problems (Wells, et al., 2001). The acculturation paradox appears to impact both physical and mental health and utilization of mental health services. However, it should be noted that this acculturation process might be different across other Latino subgroups (e.g., Cubans, Puerto Ricans, other Latinos).

Family Cultural Conflict

Since American culture is strongly characterized by the Western values of individualism

and independence (Raeff, Greenfield, & Quiroz, 2000), among multi-generation Latino families, conflict may arise between members who are raised in the United States—and, thus more acculturated to American culture—and those raised in their country of origin with stronger Latino/collectivistic values. According to Comas-Diaz (2006), the clash between the two cultures arises during the acculturation process of Latinos to the United States. The acculturation process of Latinos can be described as the adaptation and adjustment to an American culture and lifestyle (Ceballos & Palloni, 2010). This conflict may be very present in Latino families, as many families are made up of different generations.

Familism

One of the most important culture-specific values of Latinos is familism (Sabogal et al, 1987 as cited in Kouyoumdjian et al., 2003, Zinn, 1982). Familism refers to having a strong identification and attachment with family (immediate and extended), and strong feelings of loyalty to family (Hovey & King, 1996; Triandis et al., 1982). As mentioned, Latinos may seek support for mental health problems from family instead of mental health professionals; thereby, influencing the underutilization of mental health services (Kouyoumdjian et al., 2003). However, not all Latinos share this value of familism. Other Latinos in the United States share values that are more aligned with American culture, which tends to have Western values ("individualistic"). For example, Latino immigrants who have lived in the United States for many years and those who migrated at a very young age might have values that aligned closer to Western values (i.e., more "individualistic" and less "collectivistic") (Viruell-Fuentes, Miranda, & Abdulrahim, 2012).

Mental Health Stigma

Stigma related to mental health includes negative perceptions, attitudes (e.g., disgust and

shame), and behaviors (such as discrimination) towards people with mental health problems. Mental health stigma is a significant barrier to seeking mental health treatment (Vega et al., 2009). The attitudes towards having a mental illness have become a national and international concern. It has been well documented that many individuals who are in need and would benefit from mental health service utilization opt not to receive care due to stigma, mainly to avoid the label of mental illness (Corrigan, 2004). Aside from being labeled as "mentally ill", there is also stigma related to treatment. A qualitative study of Latinos with depression found that stigma was not only related to having a mental illness (i.e., depression), but also to utilizing medications (Interian et al., 2008). The study found that Latinos did not adhere to treatment with antidepressants due to the stigma of having social deficiencies, such as, being weak, unable to cope with stressors, and perceived as having a severe mental disorder (Interian, Martinez, Guarnaccia, Vega, & Escobar, 2008). Furthermore, utilizing antidepressants was perceived as equivalent to using illicit drugs and being addicted (Interian et al., 2008). The Surgeon General's 2001 report on mental health emphasized the need to end mental health stigma in order to reduce the burden of mental illness (United States Department of Health and Human Services, 2001). The World Health Organization (2001) has proposed that stigma is one of the greatest barriers to utilizing mental health care (Patel, et al, 2007 as cited in Ahmedani, 2011). Stigma is a barrier to mental health utilization not only for Latinos, but also for everyone in need of mental health care.

Need Factors

Research has identified need as one of the most consistent determinants of mental health care utilization for Latinos (Cabassa, et al., 2006); however, despite need being a determinant of utilization, research highlights that utilization of mental health services is low (Alegría, et al., 2008; Alegría, et al., 2015; Lagomasino, et al., 2005; Wells et al., 2001). For example, use of

mental health services remains low among Latinos who have similar depression rates relative to their White counterparts (Mendelson, Rehkopf, & Kubzansky, 2008). With regard to anxiety, research has found that Latinos are less likely to meet the criteria for an anxiety disorder compared to their White counterparts (Asnaani, et al., 2010); however, Latinos are more likely to have comorbid anxiety disorders compared to their White counterparts (Lagomasino, et al., 2005). With regard to substance use disorders, the prevalence rates for Latinos are similar to the general U.S. population; however, research has found that Latinos have poorer outcomes in substance abuse treatment programs and are less likely to seek help (Alvarez, Jason, Olson, Ferrari, & Davis., 2007).

Conclusion

In summary, although there is an existing body of literature on mental health service utilization among Latinos, the current literature does not address cultural variation and heterogeneity across and within Latino subgroups. The next section describes the methods used to answer the aforementioned research questions using the BMHSU.

CHAPTER 3: **METHODS**

This chapter describes the use of secondary data analysis from the National Latino and Asian American Study (NLAAS) to answer the aforementioned research questions using the Andersen's Behavioral Model of Health Services Use (BMHSU). The research design, the population and sample, and the procedures of the NLAAS are discussed. Then the instrumentation and operationalization of the dependent and independent variables are presented. Finally, the data analysis to answer the aforementioned research questions is described.

Research Design

The NLAAS used a stratified area probability sampling design fielded by the University of Michigan Survey Research Center (Alegría et al., 2004; Heeringa et al., 2004). The survey of populations for the NLASS included all Latino and Asians adults, 18 years of age or older, living in the non-institutionalized population of the United States. The survey population was stratified based on eligible adults' ancestry or national origin self-reported by household members during screening. Latinos were divided into four strata of interest: Puerto Rican, Cuban, Mexican, Other Latinos, and Asians into: Chinese, Vietnamese, Filipino, and Other Asians (Heeringa et al., 2004). The NLAAS Core sample was designed to provide a nationally representative sample of Latinos and Asian Americans without regard to geographic residential patterns. Since this approach was too costly, due to the low densities of the populations of interest, the supplemental NLAAS-High Density (HD) sample components were also implemented. The NLAAS-HD oversamples geographic areas with moderate to high densities (>5%) of the target populations of Latino and Asian households. The NLAAS-HD supplemental samples were developed for Puerto Rican, Cuban, Chinese, Filipino, and Vietnamese due to their low prevalence as a group.

Weighting reflects the joint probability of selection from the NLAAS Core and HD samples (Heeringa et al., 2004).

Population and Sample

The University of Michigan's Institute for Social Research (ISR) collected the data from May 2002 to November 2003 by having professional lay interviewers conduct face-to-face interviews with Latino and Asian American adults. To be included in the Latino sample, the eligibility criteria included: being 18 years of age or older; being Cuban, Puerto Rican, Mexican, or from other Latino origins; and being able to speak English or Spanish. Interviewers engaged in screening procedures, scheduling, and interviewing individuals who met the eligibility criteria. Informed consent was obtained, and the interviews were conducted in the respondents' preferred language (English, Spanish, Chinese, Vietnamese, or Tagalog) averaging about 2.6 hours. As a measure of quality control and to verify that the interviews were completed, a 10% random sample of each of the interviewer's completed interviews was contacted again (Heeringa et al., 2004, Pennell et al., 2004).

Procedures

Field staff prepared an enumerative housing unit list for each of the area segments in the NLASS Core; each selected housing unit was screened for persons belonging to the Latino or Asian categories. Initially, only one respondent was randomly chosen from each household that had more than one eligible adult, but due to the need to control final sample sizes for the Mexican and other Latino and other Asian subpopulations, it was only in a subsample of the NLAAS Core households that a designated respondent was randomly chosen. Due to the field cost and the projects' budget, a second eligible adult was selected for an interview. Overall,

27,026 sample housing units were screened for eligible adults for the NLAAS Core and HD samples, and 4,649 eligible respondents completed the interviews. The final sample consisted of 2,554 Latinos and 2,095 Asian Americans (Heeringa et al., 2004). This study is restricted to the Latino sample, 868 Mexicans, 577 Cubans, 495 Puerto Ricans, and 614 Other Latinos. Among the Latino sample, the weighted response rate for the combined NLAAS samples of primary and secondary adult respondents was 75.5% (Heeringa et al., 2004).

Instrumentation

Dependent Variable

Mental Health Service Utilization

Mental health service utilization is defined as receiving care/aid from any service provider for any "problems with emotions, nerves, or substance use/dependence". Mental health service utilization was operationalized dichotomously (yes, no) using the following question: "In the past 12 months, did you go to see [provider list] (Appendix 1) for problems with your emotions, nerves, or your use of alcohol or drugs?".

Appendix 1.

Provider List:

- Psychiatrist
- General practitioner or family doctor
- Any other medical doctor like a cardiologist or urologist/gynecologist
- Psychologist
- Social worker
- Counselor
- Any other mental health professional, such as a psychotherapist or mental health nurse
- A nurse, occupational therapist, or other health professional
- A religious or spiritual advisor like a minister, priest, pastor, or rabbi
- Any other healer, like an herbalist, chiropractor, doctor of oriental medicine, or spiritualist
- Other (specify)

The respondents were asked separately which specific providers they used. Three separate provider categories were created: mental health specialty field, general medical care field, and other professional providers. The mental health specialty field includes: psychiatrist, psychologist, social worker, psychotherapist, mental health nurse, and other mental health professional. The general medical care field includes general practitioner, family doctor, and any other medical doctor like a cardiologist or a gynecologist/urologist. Lastly, the other professional providers category includes chiropractor, homeopath, priest, minister, rabbi, counselor, and nurse, any other healer like an herbalist, chiropractor, doctor of oriental medicine, or spiritualist. To uniquely identify what type of service provider Latinos sought for "any problems with emotions, nerves, or substance use/dependence", three combinations of who the participants sought out included: 1.) only a professional in the mental health specialty field; 2.) only a professional not in mental health specialty field; and 3.) used more than one professional in any field.

Independent Variables

Predisposing

Gender was measured using male or female. Education was measured as years of education based on the following categories; 0-11 years, 12 years, 13-15 years, and 16 years or more; marital status includes married/cohabitating, divorced/separated/widowed, and never married; ethnic subgroup includes Mexican, Cuban, Puerto Rican, All Other Latinos; and age was measured continuously; however, the age categories (18 to 24; 25 to 34; 35 to 44; 45 to 54; 55 to 64; and 65 years old or more) were created for descriptive purposes.

Enabling

Household income was measured by reported annual household income continuously in U.S. dollars and using the 2001 Census poverty index (household income/needs ratio, range = 0-17); employment status was measured with three categories: employed, unemployed, and not in the labor force. Of note, descriptive statistics using Health insurance was dichotomously coded, with respondent had "no health insurance" or respondent had some form of health insurance assessed by a positive response to any of the following questions:

> The next questions are about health insurance obtained through jobs, purchased directly, or obtained from government programs. In answering, do not include medical plans that only supplement your income if you are in the hospital or that only pay for one type of service, such as dental care or eye glasses, or nursing home care, or accidents.; Are you covered by a) health insurance plan obtained through a current or past employer or union — either your own employer or union or the employer or union of someone else? Are you currently covered by some type of military health insurance, such as CHAMPUS, CHAMP- VA, TRICARE, or VA care? Are you covered by a health insurance plan purchased directly from an insurance company? Are you covered by Medicare, the health insurance plan for people 65 years old and older or persons with certain disabilities? Are you covered by a Medicare supplemental or Medigap policy to cover the costs of health care that are not covered by Medicare? Are you covered by (STATE NAME FOR MEDICAID), the government assistance program for people in need? Are you covered by (STATE NAME FOR STATE PLAN), the state health insurance plan for uninsured

people? Are your covered by any other type of health insurance that I have not mentioned?

Acculturation

A range of measures of language use and ability, birthplace and migration were used to measure acculturation. Specifically, language proficiency in English was assessed using the following three items "How well do you speak English? How well do you read English? and How well do you write in English? using a summary score of the responses ranging from 3 to 12 (response options ranged from poor, fair, good, to excellent) , with higher scores indicating higher English language proficiency. Language spoken at home while growing up which originally had six response options (Spanish only; mostly Spanish, some English; Spanish and English; mostly English, some Spanish; English only; and other) was recoded to only three response categories (Spanish only, both Spanish and English, and English only). Nativity originally included five categories ranging from being born in the U.S. to living in the U.S. for less than 5 years, 5 to 10 years, 11 to 20 years, and 20 years or more to only four categories (10 years or less, 11 to 20 years, 20 years or more, and U.S. born). These variables have emerged as key indicators of acculturation in other studies (Guarnaccia et al., 2007; Ortega, Resenheck, Alegría, & Desai, 2000).

Familism

Familism was measured using family support variables. More specifically, family support was measured as the level of emotional support the respondent perceived to receive from family or relatives outside the home. Three family support items were used 1) the frequency of communication and interactions with family or relatives ("How often do you talk on phone or get together with relatives?") (responses ranged from "less than once a month" to "most every day");

2) the dependability on family or relatives for help with serious problems ("How much can you rely on relatives who do not live with you for help if you have a serious problem—a lot, some, a little, or not at all?") (responses ranged from "not at all" to "a lot"); and 3) the ability to open up to family or relatives about worries ("How much can you open up to relatives who do not live with you if you need to talk about your worries?") (the response rangea are similar to the previous item). The responses were summed, creating a summary score ranging from 3 to 12, with higher scores indicating higher family support.

Family Cohesion

Family cohesion was measured using the following with ten statements: "Family members respect one another." "We share similar values and beliefs as a family." "Things work well for us as a family." "We really do trust and confide in each other." "Family members feel loyal to the family." "We are proud of our family." "We can express our feelings with our family." "Family members like to spend free time with each other." "Family members feel very close to each other." and "Family togetherness is very important." There were four response categories ranging from strongly agree to strongly disagree. The responses were summed, creating a summary score ranging from 10 to 40 with higher scores indicating higher family cohesion.

Family Cultural Conflict

As mentioned, family cultural conflict refers to conflict between family members (e.g., parents and children) where in cultural differences in values exist between generations (Lee & Liu, 2000, as cited in Miranda, Bilot, Peluso, Berman, & Van Meek, 2006). To assess family cultural conflict, many researchers have used a subscale from the Hispanic Stress Inventory (HSI) operationalizing family cultural conflict (Alegría et al., 2004; Guarnaccia et al., 2007;

Mulvaney-Day, Alegría, & Sribney, 2007). The HSI was developed in 1991 to measure the psychosocial stress experienced by Latinos in a culturally relevant approach (Cervantes, Padilla, & Salgado de Snyder, 1991). Here, the family cultural conflict scale was operationalized with a five-item subscale from the HSI assessing the respondent's cultural and intergenerational conflict with family over values and goals. The five-items asked respondents to answer how frequently the following situations occurred to them: 1) "You have felt that being too close to your family interfered with your own goals"; 2) "Because you have different customs, you have had arguments with other members of your family"; 3) "Because of the lack of family unity, you have felt lonely and isolated"; 4) "You have felt that family relations are becoming less important for people that you are close to"; and 5) "Your personal goals have been in conflict with your family". With the response options on a Likert scale from 1 to 3 (from "hardly ever or never", "sometimes", to "often"), the responses were summed, creating a summary score ranging from 5 to 15, with higher scores indicating higher family cultural conflict.

Mental Health Stigma

Mental health stigma was assessed by the question, "How embarrassed would you be if your friends knew you were getting professional help for an emotional problem?" The four responses ranged from "not at all embarrassed, not very embarrassed, somewhat embarrassed, to very embarrassed" and were recoded to the following three categories: 1) not at all embarrassed (n= 1,548), 2) not very embarrassed (n=554), and 3) somewhat or very embarrassed (n=437).

Need

The NLAAS collected data with the Composite International Diagnostic Interview (WMH-CIDI), which generates diagnoses based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) criteria. To assess mental health

need, past-year and lifetime prevalence of DSM-IV disorders for 4 composite diagnostic categories covering the following disorders: depressive disorders (dysthymia, major depressive disorder), anxiety disorders (agoraphobia, social phobia, generalized anxiety disorder, posttraumatic stress disorder, panic disorder), substance use disorders (drug abuse, drug dependence, alcohol abuse, alcohol dependence), and behavioral disorders (intermittent explosive disorder and conduct disorder[3]) were used.

Data Analysis

The data analysis was conducted using STATA Statistical Software, version 15 (Stata Corporation, 2017). Descriptive and correlational analyses are presented. Since one of the outcome variables used is dichotomous ("In the past 12 months, did you go to see [provider list] for problems with your emotions, nerves, or your use of alcohol or drugs?"; yes or no) and the explanatory variables are continuous and categorical, logistic regression was employed to test the association of predisposing factors and mental health service utilization; enabling factors and mental health service utilization; need factors and mental health service utilization; and predisposing, enabling, and need factors and mental health service utilization. Multinomial logistic regression was also employed to further examine if predisposing, enabling, and need factors predict type of service provider. The type of service provider variable was combined (as mentioned above); it is categorial with the following three combinations: using only a mental health specialty field provider, using only a general medical care field provider, and using more than one provider (mental health specialty field, general medical care field, and other professional providers). To examine if there were any interactions between Latino subgroups and

[3] Conduct disorder was only assessed for participants under the age of 45. Also, endorsing having a conduct disorder is only included in lifetime prevalence, not in the past year.

the predisposing, enabling, and need factors that predict mental health service utilization, two-way interactions were assessed.

The following assumptions required for logistic regression were met: there are no assumptions of normality or linearity, and homogeneity of variance for the independent variables; for the binary logistic regression, the dependent variable is dichotomous, use of mental health services, yes=1 or no=0; for the multinomial logistic regression, the dependent variable is nominal (including three unique combinations of type of service provider sought; there is more than one independent variable (both continuous and categorical); there is independence of observations and the outcome variable has mutually exclusive and exhaustive categories; and goodness of fit is determined with only meaningful variables included; each observation is independent, and the outcome variable has mutually exclusive and exhaustive categories. Since there should be no high multicollinearity, both collinearity and multicollinearity are addressed.

Conclusion

In summary, secondary data analysis using the NLAAS data was used to answer the aforementioned research questions using the BMHSU. The next chapter presents descriptive information about the sample and the research questions' results.

CHAPTER 4: **RESULTS**

Demographics

The demographic characteristics of the Latino sample are presented in Table 1. Based on the weighted proportion, more than half of the population is Mexican (57%). This is consistent with the previous and more current Latino representation in the United States, with the majority being of Mexican descent (United States Census Bureau, 2011). Moreover, the weighted sample is reflective of the 2000 Census in the following demographic characteristics: gender, age, and education level and different in household income (Guarnaccia et al., 2007). With regard to gender, the sample included approximately an even number of males and females. The sample included a range of ages, from 18 to 97 years old. On average the sample is comprised of young to middle-aged adults with the average age being around 40 years (*M*=38 years). Furthermore, the majority (69%) of the sample completed high school or less; however, about 10% completed a college degree. Household income ranged from zero to over $200,000, with 4% of the sample reporting no income. On average, the unweighted and weighted sample of Latinos made a little over $43,000 but less than $45,000 (*M*=$43,042), respectively. More than half of the sample is married or cohabitating, employed, and reported having some type of health insurance.

English language proficiency, language spoken at home while growing up, and nativity served as a proxy to measure acculturation. Given the range (3 to 12), on average respondents scored fairly proficient in English (*M*=7.38). The majority of respondents also reported speaking only Spanish while growing up (66%), with a quarter of the sample speaking both English and Spanish (25%), and only a minority speaking only English while growing up (8%). The sample included a similar representation across nativity, which includes being in the U.S. for 10 years or

less (19%), between 11 to 20 years (16%), for more than 20 years (28%), and being born in the U.S. (36%).

With regard to family variables, on average respondents scored fairly high on the familism (family support) scale (*M*=9.36, range 3 to 12) and on the family cohesion scale (*M*=36.23, range 10-40), and fairly low on the family cultural conflict subscale (*M*=6.35, range 5-15)—meaning they report having little cultural conflict with family and having a close family network.

When asked about mental health stigma, a little more than half of the respondents reported not being embarrassed at all if their friends knew they were getting professional help for a mental health problem. On average, the majority of the sample (>75%) did not meet criteria for a mental health problem. A little more than 20% of the sample met criteria for having experience an anxiety disorder (23%) and experiencing a behavioral disorder (21%), while a little less than 20% reported having experienced a depressive disorder (16%) or a substance use disorder (11%). Only a minority of the sample (8%) reported having utilized at least one service provider for help with their mental health problems.

Table 1. Summary of Descriptive Characteristics for Latinos in the NLAAS 2002-2003 Sample.

Characteristic	**N**	**Unweighted Proportion /Mean (SD)**	**Weighted Proportion /Mean (SE)**
PREDISPOSING FACTORS			
Gender			
Male	1,125	44.13	51.47
Female	1,424	55.87	48.53
Education Level			
0-11 years	991	38.88	44.12
12 years	632	24.79	24.46

Characteristic	N	Unweighted Proportion /Mean (SD)	Weighted Proportion /Mean (SE)
13-15 years	567	22.24	21.16
16 years or more	359	14.08	10.27
Marital Status			
Married/Cohabitating	1,595	62.57	64.20
Divorced/Separated/Widowed	479	18.79	14.47
Never Married	475	18.63	21.34
Ethnic Subgroup			
Mexican	866	33.97	56.51
Cuban	577	22.64	4.64
Puerto Rican	492	19.30	10.02
Other	614	24.09	28.74
Age	2,549	40.61 (0.31)	38.03 (0.53)
18 to 24	403	15.78	20.68
25 to 34	665	26.04	28.28
35 to 44	594	23.26	22.27
45 to 54	394	15.42	14.92
54 to 64	267	10.45	6.29
65 +	231	9.04	7.56
ENABLING FACTORS			
Household Income	2,549	45,338 (914.71)	43,042 (1791.32)
Poverty Index	2,549	3.51 (0.07)	3.21 (0.15)
Employment Status			
Employed	1,563	61.32	63.11
Unemployed	182	7.14	7.49
Not in Labor Force	804	31.54	29.40
Health Insurance			
Yes	1,782	69.94	65.39
No	766	30.06	34.61

Characteristic	N	Unweighted Proportion /Mean (SD)	Weighted Proportion /Mean (SE)
Acculturation			
English Proficiency	2,540	7.38 (0.07)	7.49 (0.20)
Language Spoken as a Child			
Spanish Only	1,670	66.16	61.93
Spanish and English	641	25.40	27.11
English Only	213	8.44	10.96
Nativity			
10 years or Less	494	19.43	18.51
11 to 20 years	409	16.09	17.84
20+ years	716	28.17	20.71
US Born	923	36.31	42.94
Familism (Family Support)	2,535	9.56 (0.49)	9.39 (0.74)
Family Cohesion	2,538	36.23 (0.10)	36.09 (0.14)
Family Cultural Conflict	2,536	6.34 (0.04)	6.35 (0.04)
Mental Health Stigma			
Not at all embarrassed	1548	60.97	57.56
Not very embarrassed	554	21.82	22.48
Somewhat or very embarrassed	437	17.21	19.96
NEED FACTORS			
Depressive Disorder Lifetime			
Yes	464	18.20	15.61
No	2,085	81.80	84.39
Depressive Disorder 12 months			
Yes	257	10.06	8.84
No	2,297	89.94	91.16
Anxiety Disorder Lifetime			

Characteristic	N	Unweighted Proportion /Mean (SD)	Weighted Proportion /Mean (SE)
Yes	644	25.26	23.12
No	1,905	74.74	76.88
Anxiety Disorder 12 months			
Yes	377	14.76	12.76
No	2,177	85.76	87.24
Substance Use Disorder Lifetime			
Yes	247	9.69	11.48
No	2,302	90.31	88.52
Substance Use Disorder 12 months			
Yes	65	2.55	2.95
No	2,489	97.45	97.05
Behavioral Disorder Lifetime			
Yes	479	18.75	20.95
No	2,075	81.25	79.05
Behavioral Disorder 12 months			
Yes	108	4.23	4.24
No	2.446	95.77	95.76
Mental Health Service Utilization			
Yes	227	8.91	7.94
No	2,322	91.09`	92.06
Type of Provider for Mental Health			
Used Only a Professional in Mental Health Specialty Field	50	22.03	22.48
Only a Professional Not in Mental Health Specialty Field	55	24.23	28.62
Used More than One Professional in Any Field	122	53.74	48.90

Table 2 presents the bivariate associations between predisposing, enabling, and need factors and mental health service utilization among Latinos. Gender, marital status, health insurance, all of the variables that make up the acculturation proxy (English proficiency,

language spoken at home while growing up, and nativity), family cohesion and family cultural conflict, along with all of the mental health disorders considered (anxiety, depressive, substance use, and behavioral) are statistically significant factors associated with the use of mental health service services.

Table 2. Bivariate Association Between Predisposing, Enabling, and Need Factor and Mental Health Service Utilization (Unweighted)

	Utilization of Mental Health Services		**No Utilization of Mental Health Services**	
Characteristic	**N**	**Proportion /Mean (sd)**	**N**	**Proportion /Mean (se)**
PREDISPOSING FACTORS				
Gender*				
Male	84	37.00	1041	44.83
Female	143	63.00	1281	55.17
Education Level				
0-11 years	79	34.80	912	39.28
12 years	55	24.23	577	24.85
13-15 years	52	22.91	515	22.18
16 years or more	41	18.06	318	13.70
Marital Status*				
Married/Cohabitating	127	55.95	1468	63.22
Divorced/Separated/Widowed	59	25.99	420	18.09
Never Married	41	18.06	434	18.69
Ethnic Subgroup				
Mexican	69	30.40	797	34.32
Cuban	52	22.91	525	22.61
Puerto Rican	53	23.35	439	18.91
Other	53	23.35	561	24.16
Age	227	40.81 (13.83)	2322	40.60 (15.82)
18 to 24	31	13.66	371	15.98
25 to 34	45	19.82	618	26.61
35 to 44	73	32.16	521	22.44
45 to 54	38	16.74	354	15.25

	Utilization of Mental Health Services		No Utilization of Mental Health Services	
Characteristic	**N**	**Proportion /Mean (sd)**	**N**	**Proportion /Mean (se)**
54 to 64	25	11.01	242	10.42
65 +	15	6.61	216	9.30
ENABLING FACTORS				
Household Income	227	46580.53 (46182)	2322	45216.12 (46161)
Poverty Index	227	3.70 (4.03)	2322	3.49 (3.73)
Employment Status				
Employed	124	54.63	1439	61.97
Unemployed	21	9.25	161	6.93
Not in Labor Force	82	36.12	722	31.09
Health Insurance*				
Yes	171	75.77	1610	69.37
No	55	24.23	711	30.63
Acculturation				
English Proficiency *	226	8.35 (3.44)	2314	7.29 (3.58)
Language Spoken as a Child*				
Spanish Only	122	54.46	1,548	67.30
Spanish and English	68	30.36	573	24.91
English Only	34	15.18	179	7.78
Nativity*				
10 years or Less	28	12.33	466	20.13
11 to 20 years	30	13.22	379	16.37
20+ years	60	26.43	656	28.43
US Born	109	48.02	814	35.16
Familism (Family Support)	225	9.45 (2.48)	2,310	9.57 (2.48)
Family Cohesion*	226	35.04 (5.94)	2312	36.35 (5.10)
Family Cultural Conflict*	225	6.76 (2.28)	2311	6.30 (2.27)

	Utilization of Mental Health Services		No Utilization of Mental Health Services	
Characteristic	N	Proportion /Mean (sd)	N	Proportion /Mean (se)
Mental Health Stigma				
Not at all embarrassed	136	59.91	1412	61.07
Not very embarrassed	47	20.70	507	21.93
Somewhat or very embarrassed	44	19.38	393	17.00
NEED FACTORS				
Depressive Disorder Lifetime*				
Yes	73	32.16	391	16.84
No	154	67.84	1931	83.16
Depressive Disorder last 12 months*				
Yes	43	18.94	213	9.17
No	184	81.06	2109	90.83
Anxiety Disorder Lifetime*				
Yes	110	48.46	534	23.00
No	117	51.54	1788	77.00
Anxiety Disorder last 12 months*				
Yes	67	29.52	309	13.31
No	160	70.84	2013	86.69
Substance Use Disorder Lifetime*				
Yes	49	21.59	198	8.53
No	178	78.41	2124	91.47
Substance Use Disorder last 12 months*				
Yes	16	7.05	49	2.11
No	211	92.95	2273	97.89
Behavioral Disorder Lifetime*				
Yes	73	32.16	405	17.44
No	154	67.84	1,917	82.56
Behavioral Disorder last 12 months*				
Yes	19	8.37	89	3.83

Characteristic	Utilization of Mental Health Services N	Utilization of Mental Health Services Proportion /Mean (sd)	No Utilization of Mental Health Services N	No Utilization of Mental Health Services Proportion /Mean (se)
No	208	91.63	2233	96.17

*Note: * p<0.05; unweighted sample=2,549 and weighted sample=21,619,294*

Utilization of Mental Health Services and BMHSU Factors

The following four tables address the first research question and sub-questions. Table 3 presents the association between predisposing factors and mental health service utilization among Latinos, using logistic regression. The overall model was statistically significant (F=5.28; df=10, 44; p=0.01); that is, predisposing factors and mental health service utilization were found to be associated. With regard to gender, females are 1.42 times more likely to use mental health services compared to males (p= 0.02). Divorced, separated, or widowed Latinos are 2.11 times more likely to use mental health services compared to married or cohabitating Latinos (p=0.01). The likelihood of using mental health services did not statistically significantly differ among never married and married individuals. Furthermore, Latino subgroup, educational level, and age are not statistically significant predictors of mental health service utilization net of the other variables in the model.

Table 3. Predisposing Factors and Mental Health Service Utilization using Logistic Regression (Weighted)

Predisposing Factors	Mental Health Service Utilization Odds Ratio	95% CI
Gender		
Female	1.42*	1.06-1.91
Marital Status		
Divorced/Separated/Widowed	2.11*	1.243-3.58
Never Married	0.94	0.546-1.63

Predisposing Factors	**Mental Health Service Utilization** Odds Ratio	95% CI
Education Level		
12 years	1.50	0.93-2.41
13-15 years	1.48	0.97-2.26
16 years or more	2.01	1.07-3.80
Latino Subgroup		
Cuban	1.14	0.64-1.99
Puerto Rican	1.24	0.75-2.05
All Other Latinos	1.03	0.75-1.43
Age	1.00	0.99-1.01

*Note: *p<0.05; Reference Categories= Gender: Male; Marital Status: Married; Education: 0-11 Years; Latino Subgroup: Mexican*

In Table 4, the association between enabling factors and mental health service utilization among Latinos is also assessed with a logistic regression. Although the model is statistically significant (F=3.60; df=20, 33; p=0.01), the association between enabling factors and mental health service utilization was not found to be statistically significant for any of the variables in the model, holding other variables constant.

Table 4. Enabling Factors and Mental Health Service Utilization using Logistic Regression (Weighted)

Enabling Factors	**Mental Health Service Utilization** Odds Ratio	95% CI
Work Status		
Unemployed	1.65	0.83-3.28
Not in Labor Force	1.09	0.76-1.56
Insurance		
No Insurance	0.85	0.58-1.27
Acculturation		
English Proficiency	1.05	0.98-1.11

Enabling Factors	Mental Health Service Utilization Odds Ratio	95% CI
Language Spoken as a Child		
Spanish and English	1.29	0.68-2.46
English Only	1.81	0.90-3.68
Years in the US		
10 years or Less	0.58	0.27-1.29
11-20 years	1.19	0.62-2.27
More than 20 years	1.15	0.70-1.89
Mental Health Stigma		
Not Very Embarrassed	0.83	0.48-1.42
Somewhat or Very Embarrassed	0.84	0.55-1.27
Familism (Family Support)	1.03	0.95-1.11
Family Cohesion	0.97	0.94-1.00
Family Cultural Conflict	1.06	0.98-1.15
Household Income	1.00	0.99-1.00

*Note: *p<0.05; Reference Categories= Work Status; Employed; Insurance: Yes Insured; Language Spoken as a Child: Spanish Only; Years in The Us: US Born; Mental Health Stigma: Not at All Embarrassed*

In Table 5, the association between need factors (that is, having experience a depressive, anxiety, substance use, and/or a behavioral disorder) and mental health service utilization among Latinos is assessed with a logistic regression. The results were statistically significant (F=19.45; df=4, 50; p=0.01), that is, having a mental health need and using mental health services were found to be associated. With regard to anxiety disorders, Latinos who experience an anxiety disorder are 2.3 times more likely to use mental health services compared to those who do not experience an anxiety disorder (p=0.001). Latinos who have experienced a substance use disorder are 1.62 times more likely to use mental health services compared to Latinos not having experienced a substance use disorder (p=0.029). Further, Latinos having experienced a behavioral disorder are 1.72 times more likely to use mental health services compared to Latinos

not having experienced a behavioral disorder (*p*=0.008). However, the likelihood of using mental health services do not differ among Latinos having experienced a depressive disorder and not having experienced a depressive disorder (*p*=0.170).

Table 5. Need Factors and Mental Health Service Utilization using Logistic Regression (Weighted)

Need Factors	**Mental Health Service Utilization** Odds Ratio	95% CI
Anxiety Disorder		
Yes	2.31*	1.56-3.43
Depressive Disorder		
Yes	1.37	0.87-2.16
Substance Use Disorder		
Yes	1.62*	1.05-2.49
Behavioral Disorder		
Yes	1.72*	1.16-2.56

*Note: *p<0.05; Lifetime prevalence was used for Need Factors; Reference Categories: Anxiety Disorder: No Anxiety Disorder; Depressive Disorder: No Depressive Disorder; Substance Use Disorder: No Substance Use Disorder; Behavioral Disorder: No Behavioral Disorder*

Table 6 presents the association of all predisposing, enabling, and need factors and mental health service utilization among Latinos with a logistic regression. The overall model is statistically significant (*F*=20.14; *df*=34, 19; *p*=0.01). With regard to gender, females are 1.71 times more likely than males to use mental health services (*p*= 0.046). Latinos having experienced an anxiety disorder are 2.21 times more likely to use mental health services compared to Latinos not having experienced an anxiety disorder (*p*=0.001). Latinos having experienced a substance use disorder are 1.87 times more likely to use mental health services compared to Latinos not having experience a substance use disorder (*p*=0.026). Latinos having experienced a behavioral disorder are 1.67 times more likely to use mental health services

compared to Latinos not having experience a behavioral disorder (p=0.037). Marital status, education, Latino subgroup, age, work status, insurance, acculturation variables considered, family variables considered, and having experienced a depressive disorder are not significant predictors of mental health service utilization net of the other variables in the model.

Table 6. Predisposing, Enabling, and Need Factors and Mental Health Service Utilization using Logistic Regression (Weighted)

	Mental Health Service Utilization	
BMHSU Factors	Odds Ratio	95% CI
PREDISPOSING FACTORS		
Gender		
Female	1.71*	1.14-2.58
Marital Status		
Divorced/Separated/Widowed	1.73	0.91-3.30
Never Married	0.81	0.45-1.44
Education Level		
12 years	1.16	0.72-1.86
13-15 years	1.01	0.62-1.66
16 years or more	1.70	0.98-2.97
Latino Subgroup		
Cuban	1.47	0.86-2.52
Puerto Rican	0.93	0.59-1.47
All Other Latinos	0.99	0.68-1.44
Age	1.01	0.99-1.03
ENABLING FACTORS		
Work Status		
Unemployed	1.64	0.77-3.48
Not in Labor Force	0.87	0.56-1.34
Insurance		
No Insurance	0.91	0.58-1.42

BMHSU Factors	Mental Health Service Utilization Odds Ratio	 95% CI
Acculturation		
English Proficiency	1.03	0.95-1.12
Language Spoken as a Child		
Spanish and English	1.24	0.62-2.46
English Only	1.79	0.78-4.10
Years in the US		
10 years or Less	0.80	0.32-2.02
11-20 years	1.63	0.74-3.57
More than 20 years	1.11	0.62-1.97
Mental Health Stigma		
Not Very Embarrassed	0.83	0.48-1.42
Somewhat or Very Embarrassed	0.83	0.52-1.34
Familism (Family Support)	1.02	0.95-1.11
Family Cohesion	0.98	0.94-1.01
Family Cultural Conflict	0.99	0.90-1.08
Household Income	1.00	0.99-1.00
NEED FACTORS		
Anxiety Disorder		
Yes	2.21*	1.48-3.3
Depressive Disorder		
Yes	1.14	0.71-1.84
Substance Use Disorder		
Yes	1.94*	1.15-3.29
Behavioral Disorder		
Yes	1.83*	1.14-2.93

*Note: *p<0.05; the model is using lifetime prevalence for Need Factors; Reference Categories: Gender: Male; Marital Status: Married; Education: 0-11 Years; Latino Subgroup: Mexican; Work Status; Employed; Insurance: Yes Insured; Language Spoken as a Child: Spanish Only; Years in The Us: US Born; Mental Health Stigma: Not at All Embarrassed; Anxiety Disorder:*

No Anxiety Disorder; Depressive Disorder: No Depressive Disorder; Substance Use Disorder: No Substance Use Disorder; Behavioral Disorder: No Behavioral Disorder

Type of Mental Health Service Used and BMHSU Factors

The second research question was assessed using a multinomial logistic regression, focusing on predisposing, enabling, and need factors predicting the type(s) of service provider Latinos use for mental health problems. In Table 7, only the predisposing, enabling, and need factors with a statistically significant bivariate association with type of service provider less than $p<0.05$ were selected to be in the full model (i.e., marital status, education level, language spoken as a child, years in the U.S., family cultural conflict, having experienced an anxiety disorder, and having experienced a depressive disorder). The overall model was statistically significant ($F=11.39$; $df=26, 8$ $p=0.01$). Divorced/separated/widowed Latinos compared to married Latinos, are significantly less likely (RRR= 0.14, 95% CI: 0.03-0.67) to use only a professional in the mental health specialty field compared to using more than one type of professional and less likely (RRR= 0.21, 95% CI: 0.06-0.67) to use only a professional not in the mental health specialty field compared to using more than one type of professional, given the other variables in the model are held constant. Latinos with 13 to 15 years of education compared to Latinos with less than 11 years of education are more likely (RRR= 2.63, 95% CI: 1.29-5.35) to use only a professional in the mental health specialty field compared to using more than one type of professional, given the variables in the model are held constant. Latinos growing up speaking both English and Spanish compared to Latinos who spoke only Spanish growing up are significantly less likely (RRR= 0.33, 95% CI: 0.13-0.86) to use only a professional in the mental health specialty field compared to using more than one type of professional, given the variables in the model are held constant. Latinos having experienced an anxiety disorder compared to not having experienced an anxiety disorder are significantly less

likely (RRR= 0.25, 95% CI: 0.11-0.59) to use only a professional in the mental health specialty field compared to using more than one type of professional, given the variables in the model are held constant. Furthermore, years in the U.S., family cultural conflict, and having experienced a depressive disorder are not significant predictors of the type of service(s) used for mental health net of the other variables in the model.

Table 7. Type of Mental Health Service Used and BMHSU Factors using Multinomial Logistic Regression

Base Category: Using More Than One Type of Professional	**Used Only a Professional in MH Specialty Field**		**Used Only a Professional Not in MH Specialty Field**	
	RRR	**CI 95%**	**RRR**	**CI 95%**
PREDISPOSING FACTORS				
Marital Status				
Divorced/Separated/Widowed	0.14*	0.03-0.67	0.21*	0.06-0.67
Never Married	0.99	0.44-2.21	0.39	0.10-1.51
Education Level				
12 years	0.70	0.18-2.66	0.38	0.11-1.33
13 15 years	2.63*	1.29-5.35	0.54	0.18-1.61
16 years or more	0.83	0.20-3.52	0.42	0.18-0.98
ENABLING FACTORS				
Acculturation				
Language Spoken as a Child				
Spanish and English	0.33*	0.13-0.86	0.90	0.38-2.17
English Only	1.02	0.24-4.37	1.99	0.45-8.84
Years in the US				
10 years or Less	0.42	0.07-2.43	1.18	0.19-7.39
11-20 years	0.90	0.25-3.33	1.57	0.51-4.81
More than 20 years	0.43	0.12-1.48	0.52	0.13-2.06
Family Cultural Conflict	0.98	0.81-1.18	0.92	0.77-1.09
NEED FACTORS				

Base Category: Using More Than One Type of Professional	Used Only a Professional in MH Specialty Field		Used Only a Professional Not in MH Specialty Field	
	RRR	**CI 95%**	**RRR**	**CI 95%**
Anxiety Disorder				
Yes	0.26*	0.11-0.59	0.77	0.36-1.66
Depressive Disorder				
Yes	0.93	0.32-2.72	0.40	0.14-1.17

*Note: *p<0.05; Lifetime prevalence was used for Need Factors; Reference Categories: Gender: Marital Status: Married; Education: 0-11 years; Language Spoke as a Child: Spanish Only; Years In the US: US Born; Anxiety Disorder: No Anxiety Disorder; Depressive Disorder: No Depressive Disorder*

Latino Subgroups and Predictors of Mental Health Service Utilization

The last research question focused on assessing if there are any interactions between Latino subgroups and the predisposing, enabling, and need factors that predict mental health service utilization. As noted previously in Table 6, the overall model was significant (F=20.14; df=34, 19; p=0.01); however, there were no significant two-way interactions between Latino subgroups and the predisposing, enabling, and need factors predicting mental health service utilization (see Appendix 2 for table).

Appendix 2. Mental Health Service Utilization and Two-way Interactions between BMHSU Factors and Latino Subgroups

Characteristic	*p*-value
PREDISPOSING FACTORS	
Gender	0.0547
Education Level	0.6046
Marital Status	0.2847
Age	0.2314
ENABLING FACTORS	
Household Income	0.8730
Employment Status	0.0951

Characteristic	*p*-value
Health Insurance	0.9245
Acculturation	
English Proficiency Scale	0.8970
Language Spoken as a Child	0.2062
Nativity	0.0897
Familism (Family Support)	0.3163
Family Cohesion	0.7557
Family Cultural Conflict	0.8288
Mental Health Stigma	0.3394
NEED FACTORS	
Depressive Disorder	0.6306
Anxiety Disorder	0.2360
Substance Use Disorder	0.5140
Behavioral Disorder	0.2168

Conclusion

The results are further discussed in the following chapter, including the strengths and limitations of this study, and the future directions as a result of this work.

CHAPTER 5: **DISCUSSION**

Summary

In effort to better understand Latinos' utilization of mental health services, this study used the BMHSU to examine the effects of predisposing, enabling, and need factors on the use of mental health services among Latinos. The study used the most recent national dataset available with information on the mental health of Latinos and their service utilization. This research considered socio-cultural determinants of mental health service utilization along with evaluated mental health, that is, having experienced a depressive, anxiety, substance use, and/or behavioral disorder.

Confirming previous research, this study found that there is an association between gender, marital status, health insurance, acculturation (English proficiency, language spoken at home while growing up, and nativity), family cohesion and family cultural conflict, along with all of the mental health disorders considered (anxiety, depressive, substance use, and behavioral) and the use of mental health services.

As mentioned, the BMHSU has been used to describe the factors that are important to health service utilization. When examining only predisposing factors and mental health service utilization, this study found females are more likely than males to use mental health services, which supports prior research that gender has implications for mental health service utilization (Mojtabai, Olfson, & Mechanic, 2002; Peifer, Hu, & Vega, 2000; Vega et al., 1999; Vega, Kolody, & Aguilar-Gaxiola, 2001). Although research has documented the need to further consider the reasons why males utilize mental health services less often than females (Ojeda & Bergstresser, 2008), other research has identified potential factors (e.g., stigma [Wang et al. 2005]) contributing to this disparity. Specifically, stigma related to mental health problems may

be impacting males' decision to utilize needed mental health services. One study found that males experience higher levels of mental health stigma related to mental health problems and help seeking, compared to females (Judd, Komiti, & Jackson, 2008). Also, it is important to note existing gender stereotypes (e.g., men have to be strong) as they relate to mental health stigma (e.g., having a mental health problem implies weakness), and how these perceptions impact utilization of services. Due to the documented hardworking ethic among Latinos, it may be common for males to seek treatment for physical and mental health problems only after a crisis/emergency due to their commitment to their work and family. Studies have addressed *machismo* as an aspect related to men in the Latino culture. Although often discussed as a negative attribute, *machismo* has been defined by Latinos as being hardworking and maintaining a strong image; therefore, Latino males who have such beliefs may withstand pain and hardships before seeking support for their needs (Hawkins, et al., 2017). In this sample of Latinos, only 8% reported utilizing mental health services, and of those who utilized services, 63% were female— a finding that supports prior research highlighting the lower rates of mental health service utilization among Latino males when compared to their female counterparts (Ortega & Alegría, 2002; Vega et al., 2001; Wells et al., 1989). It is important to consider how gender specific perceptions may contribute to the notable trend for females to be more likely to seek and use health and mental health services. Further, it is important to consider gender and the prevalence of specific mental health problems and the burden of mental health problems on an individual level when examining use of services— for example depressive and anxiety disorders are much higher in females and substance use disorders and behavioral disorders are higher in males (United States Department of Health and Human Services, 2001). Further, depressive disorders are predicted to soon be one of the leading causes of disability in the world; therefore, females

may be seeking out and using more mental health services than males, given that depressive disorders are lower for males and its symptoms impact one's ability to function (e.g., high risk for disability), compared to other mental health disorders. Further, when examining predisposing factors, this study also found that divorced, widowed, and/or separated Latinos are more likely to use mental health services compared to married Latinos. This may be expected given the marital status reported. For instance, individuals may use mental health services to cope with a troubled relationship or marriage and for bereavement compared to Latinos in a marriage. Married or cohabitating couples may have each other for support; they may use the support of their partner in relation to experiencing any mental health problems and may not have the need to seek professional support outside of marriage/relationship.

When only examining enabling factors related to using mental health services, this study did not find any statistically significant associations. This is an interesting finding, given the abundance of literature focusing on the considered internal and external enabling factors related to mental health service utilization (e.g., income, works status, insurance, acculturation, mental health stigma). Specifically, research has highlighted that among Latinos in the U.S., having higher income and higher levels of education predicts mental health service utilization (Alegría et al., 2002). In addition, work status, specifically being unemployed, has been found be positively related to using mental health services (Ortega & Alegría, 2002; Peifer et al., 2000). With regard to acculturation, research has found that some Latinos (i.e., Mexican-Americans) who had higher levels of acculturation were more likely to use mental health services compared to Latinos who had lower levels of acculturation (Vega et al., 1999). Given the findings in this study, it is important to consider that association might have not been statistically significant given all the predictors included in the logistic regression, with such a small percentage (8%) of

the sample utilizing mental health services. Further, culture specific enabling factors that were included in the analysis may contribute indirectly to some extent. For example, given that Latinos in the sample on average scored high on the familism and family cohesion scales and low on the family cultural conflict scale; hence, mental health needs may not be present or may be addressed within the family, instead of seeking support from a professional. In addition, mental health stigma in this study was assessed using only one item ("How embarrassed would you be if your friends knew you were getting professional help for an emotional problem?"), which may be limiting, regarding its applicability in terms of Latino culture and mental health service utilization. Other studies have used more applicable questionnaires, such as, the Stigma Checklist Questionnaire (SCQ; Vega, Rodriguez, & Ang, 2010), consisting of seven questions focused on assessing mental health stigma related to depression treatment among Latinos.

It is important to further examine the interaction of the aforementioned predictors and mental health service utilization among Latinos. For instance, research has highlighted that people with higher incomes tend to receive mental health care services more than those with lower incomes (Katz et al., 1997). Specifically, household income may impact the mental health of multi-generational households, considering Latino specific cultural values. For example, if some family members in a shared household have collectivist Latino values, other family members may be expected to share their income and conflict may arise among family members who have individualistic values that do not align with collectivistic values. This conflict may then lead to the need for mental health care services and income may influence the decision to use or not use mental health services. For example, the cost of mental health services may impact the overall financial contribution an individual makes to the family. However, in this sample, Latinos on average had a positive familial connection (i.e., familism and family cohesion) and

low conflict (i.e., family cultural conflict); hence, seeking support outside of the family unit might have not been considered necessary—which may be reflected in the low use of services. Overall, having a positive familial connection has been identified as a protective factor against mental health problems (Ayón, Marsiglia, & Bermudez-Parsai, 2010; Rivera et al., 2008; Snowden, 2007). In contrast, Latinos with a mental health need have been found to report lower levels of familism (Villatoro, Morales, & Mays, 2014).

When examining only need factors and mental health service utilization, anxiety, substance use, and behavioral disorders were statistically significant predictors of use. All mental health disorders considered, with the exception of depressive disorders, were strong predictors of mental health service utilization. This could be due to the stigma related to depressive disorders as opposed to the stigma around anxiety, substance use, and behavioral disorders. Research has documented that Latinos with higher levels of perceived mental health stigma due to Latino cultural expectations (e.g., being resilient with life's problems—coping without antidepressants or without seeing a professional [Interian et al., 2010]), are less likely to share their depressive symptoms and diagnosis with their family and support system, less likely to use medication, less likely to adhere to medication to treat their depressive disorders, and more likely to not be consistent with using mental health services (Interian et al., 2010, Vega et al., 2010). Further, this study did not account for attitudes and beliefs around mental health problems, which have been found to affect the utilization of mental health care services among Latinos. For example, some Latinos believe that depression is inherited or caused by forces out of the individual's control, such as, God's will, God's punishment, or spiritual practices like witchcraft (Barrera, Gonzalez, & Jordan, 2013). Beliefs of this kind may lead to the assumption that depressive disorders are inevitable and unalterable. Consequently, it is expected that attitudes and beliefs about mental

health service utilization depend on the perceived causes of depressive disorders. Further, as mentioned, this sample of Latinos reported having strong familial connections and low family cultural conflict (as noted in the descriptive statistics). Therefore, if they are having depressive symptoms, Latinos may be less likely to use professional services and instead seek support from their family.

Anxiety, substance use, and behavioral disorders may be perceived as less stigmatizing among Latinos. This may explain why they were found to be statistically significant predictors of mental health service utilization in this study. For example, some studies have found that Latinos discuss symptoms of anxiety as "*nervios,*" and thereby related to somatic distress (Baer et al. 2003; Guarnaccia et al. 1989, 1992, 1993). This allows the individual to avoid the stigma related to having a mental health problem. Further, substance use and conduct disorders may be perceived as less stigmatizing due to symptoms more likely being observed externally versus internally (e.g., depressive symptoms).

Despite the aforementioned associations, it is important to note that when applying the BMHSU to mental health service use, the results in this study suggested that not all predisposing, enabling, and need factors are significant predictors of mental health service utilization among Latinos. Specifically, when using logistic regression to examine the factors predicting use of services, gender, having experienced an anxiety disorder, substance use disorder, and/or behavioral disorder were associated with mental health service utilization when all other covariates were considered. There was no difference between Latino subgroups (Cubans, Puerto Ricans, Mexican, and other Latinos), even though, Latinos as a group are heterogeneous. Furthermore, in contrast with the peer-reviewed literature, enabling factors (e.g., household income, education level, work status, acculturation, mental health stigma, and Latino culture

specific family factors) were not statistically significant predictors of using mental health services.

Further, this study found no statistically significant differences among Latino subgroups with regard to BMHSU factors. These findings could be a result of the small percentage (8%) of Latinos reporting the use of mental health services.

Limitations and Strengths

There are several limitations to this study. As with all self-report data, it is unknown whether these data accurately present the respondents' experiences or if respondents preferred not to discuss mental health and family issues, and report use of mental health services. Some research indicates that Latinos feel uncomfortable speaking about their mental health due to stigma, which could apply to disclosing problems with their emotions, such as feeling depressed (Barrera et al., 2013). Furthermore, research reports that Latinos underutilize mental health services; hence, it is difficult to study Latinos' utilization when they are not using mental health services. Another limitation is the use of a cross-sectional survey, which cannot establish causality due to the difficulty in establishing the time sequence of events.

However, this study highlights socio-cultural determinants of mental health service utilization among Latinos, a relationship that has been not been fully explored using national representative Latino samples. It also addresses sensitive and important topics among the Latino population, mental health and generated diagnoses based on the DSM-IV criteria for depressive, anxiety, substance use, and behavioral disorders, along with cultural values. Despite the mentioned limitations, the findings of this study contribute to the knowledge base of Latino mental health service utilization. Furthermore, this study uses a nationally representative sample,

which includes Latino subgroups and examines the interaction of multiple determinants of service utilization.

Social Work Practice and Policy Implications

Social workers and other mental health service providers should consider the role of cultural values (e.g., is there cohesion or conflict among their family, if so, how is this affecting their mental health and/or their treatment adherence) when providing treatment to Latinos, especially since one of the most important culture-specific values of Latinos is familism. Moreover, it is important to better understand the role of family, values, and mental health stigma in the lives of Latinos, as such may be influencing decision-making and behavior to seek care for mental health problems, and by doing so we may be able to better serve this population. For example, the role/influence of family could be incorporated into cultural competency and cultural sensitivity trainings, and mental health stigma can be assessed prior to developing a treatment plan (i.e., accounting for potential internal and external barriers to effective care).

Further, the current shifting policy environment affecting Latinos needs to be taken into consideration. Specifically, how is the current political climate affecting Latino mental health and further exacerbating access to services due to fear or concerns related to U.S. Citizenship and Immigration Service polices? For example, undocumented Latino immigrants might have fears of being considered a public charge if using government funded programs for mental health or substance use. Also, they may be afraid of being perceived by immigration officials as not of good moral character when applying to change their legal status, due to their own negative perception of mental health problems.

In addition, with the current political climate, there is uncertainty around the future of mental health care coverage by health care insurances. The 2008 Mental Health Parity and

Addiction Equity Act (MHPAEA) laws require most health plans to cover mental health services. However, the uncertainty lies within the future of the Affordable Care Act (ACA, enacted in 2010) and its alternative, the American Health Care Act (AHCA, first introduced in the House of Representatives in March 2017), which places mental health and substance abuse care in jeopardy. For example, the recent discussions have highlighted that with the enactment of the AHCA States could exempt themselves from the ACA provision that require insurers to offer a minimum set of essential health benefits— meaning, insurers can decide if they want to cover mental health and substance abuse services.

Future Research Directions

Overall, findings highlight the need for research to expand work on the influence of socio-cultural determinants and cultural values among Latinos' mental health and mental health service utilization. Although there are benefits to using quantitative secondary data analysis and complex national data sets, future qualitative research is imperative when examining Latino culture specific factors and mental health care. Qualitative research could help examine the factors that influence use of mental health services among Latinos, such as, conducting in-depth qualitative interviews (e.g., what factors influenced your decision to use services, how did your family play a role in your decision to utilize services) with Latinos receiving mental health care. It is important to better understand the role of family and values in the lives of Latinos, as such may be influencing stigma, decision-making related to care, and behavior to seek care for mental health problems. It is imperative that we further examine the socio-cultural determinants of mental health and mental health service utilization of Latinos, as this population continues to grow and their rates of using services remain low. Future research should also examine what contributes to gender differences in mental health service utilization. We need to better

understand factors attributed to increased help-seeking behavior for both males and females and encourage interventions that consider the aforementioned factors along culture specific analyses.

REFERENCES

Abe-Kim, J., Takeuchi, D.T., Hong, S., Zane, N., Sue, S., Spencer, M.S., Appel, H., Nicdao, E., Alegría, M. (2007). Use of mental health-related services among immigrant and US-born Asian Americans: Results from the national Latino and Asian American study. *American Journal of Public Health, 97*(1), 91-98.

Acevedo-García D., Soobader M. J., & Berkman L. F. (2007). Low birthweight among U.S. Hispanic/Latino subgroups: The effect of maternal foreign-born status and education. *Social Science and Medicine 65*, 2503- 2516. doi: 10.1016/j.socscimed.2007.06.033

Adler, N. E., & Rehkopf, D. H. (2008). U.S. disparities in health: Descriptions, causes, and mechanisms. *Annual Review of Public Health*, *29*, 235-252. doi: 10.1146 /annurev.publhealth.29.020907.090852

Agbayani-Siewert, P., Takeuchi, D. T. & Pangan, R. W. (1999). Mental illness in a multicultural society. In C. Aneshensal & J. Phelan (Eds.), *Handbook of the Sociology of Mental Illness* (pp. 19-36). New York, NY: Springer Science.

Ahmedani, B. K. (2011). Mental health stigma: society, individuals, and the profession. *Journal of Social Work Values and Ethics*, *8*(2), 41–416.

Alegría, M., Canino, G., Rios, R., Vera, M., Calderon, J., Rusch, D., & Ortega, A.N. (2002). Mental health care for Latinos: Inequalities in use of specialty mental health services among Latinos, African Americans, and Non-Latino Whites. *Psychiatric Services, 53*(12), 1547– 1555.

Alegría, M., Chatterji, P., Wells, K., Cao, Z., Chen, C., Takeuchi, D., Jackson, J., & Meng, X. 2008. Disparity in depression treatment among racial and ethnic minority populations in the United States. *Psychiatric Services, 59*. 1264-1272. doi: 10.1176/appi.ps.59.11.1264

Alegria, M., Green, J. G., McLaughlin, K. A., & Loder, S. (2015). Disparities in child and adolescent mental health and mental health services in the U.S. Retrieved from http://www.mamh.org/Portals/0/Uploads/Documents/Public/Disparities%20in%20Child %20and%20 Adolescent%20Mental%20Health.pdf

Alegría, M., Robles, R., Freeman, D.H., Vera, M., Jimenez, A.L., Rios, C., & Rios, R. (1991). Patterns of mental health utilization among island Puerto Rican poor. *American Journal of Public Health*, 81:875–879.

Alegria, M., & Takeuchi, D. (2013). National Latino and Asian American Study (NLAAS), 2002-2003. Ann Arbor, MI: [distributor], 2013-09-18.

Alegria, M., Takeuchi, D., Canino, G., Duan, N., Shrout, P., Meng, X.L., Vega, W., Zane, N., Vila, D., Woo, M., Vera, M., Guarnaccia, P., Aguilar-Gaxiola, S., Sue, S., Escobar, J., Lin, K.M., & Gong, F. (2004). Considering context, place and culture: the National Latino and Asian American Study. *International Journal of Methods in Psychiatric Research, 13*(4), 208–220.

Alegria, M., Vila, D., Woo, M., Canino, G., Takeuchi, D., Vera, M., Febo, V., Guarnaccia, P., Aguilar-Gaxiola, S., & Shrout, P. (2004). Cultural relevance and equivalence in the NLAAS instrument: integrating etic and emic in the development of cross-cultural measures for a psychiatric epidemiology and services study of Latinos. *International Journal of Methods in Psychiatric Research, 13*(4), 270–288.

Alvarez, J., Jason, L.A., Olson, B. D., Ferrari, J. R., Davis, M. I. (2007). Substance abuse

prevalence and treatment among Latinos and Latinas. *Journal of Ethnicity in Substance Abuse. 6(*2). 115-141. DOI: 10.1300/J233v06n02_08

Andersen, R. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, *36*(1), 1–10. doi:10.2307/2137284

Andersen, R., Lewis, S. Z., Giachello, A. L., Aday, L. A., & Chiu, G. (1981). Access to medical care among the Hispanic population of the southwestern United States. *Journal of Health and Social Behavior, 22*(1), 78–89. doi:10.2307/2136370

Andersen, R., & Newman, J. F. (1973). Societal and individual determinants of medical care utilization in the United States. *The Milbank Memorial Fund quarterly. Health and Society*, *51*(1), 95–124.

Anxiety and Depression Association of America (ADAA). (2008). Understand the facts-substance use disorders. Retrieved from https://adaa.org/understanding-anxiety/related-illnesses/substance-abuse

Asnaani, A., Richey, J. A., Dimaite, R., Hinton, D. E., & Hofmann, S. G. (2010). A cross-ethnic comparison of lifetime prevalence rates of anxiety disorders. *The Journal of Nervous and Mental Disease, 198*(8), 551-5.

Association, A. P. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR.* American Psychiatric Publishing, Inc.

Ayón C., Marsiglia F..F, Bermudez-Parsai M. (2010). Latino family mental health: Exploring the role of discrimination and familismo. *Journal of Community Psychology*. 38:742–756.

Baer, R. D., Weller, S. C., de Alba Garcia, J. G., Glazer, M., Trotter, R., Pachter, L., & Klein, R. E. (2003). A cross-cultural approach to the study of the folk illness nervios. *Cult Med Psychiatry, 27*(3), 315-337.

Barrera, I., Gonzalez, J., & Jordan, C. (2013). Perceptions of Mental Illness among Mexican-Americans in the Rio Grande Valley. *Journal of Ethnic and Cultural Diversity in Social Work*, *22*(1), 1–16.

Baron, R. C., & Salzer, M. S. (2002). Accounting for unemployment among people with mental illness. *Behavioral Sciences & the Law*, *20*(6), 585–599. doi:10.1002/bsl.513

Berdahl, T., & Torres Stone, R. (2009). Examining Latino differences in mental healthcare use: The roles of acculturation and attitudes towards healthcare. *Community Mental Health Journal, 45*, 393-403. doi: 10.1007/s10597-009-9231-6

Berry, J. W. (2005). Acculturation: Living successfully in two cultures. *International Journal of Intercultural Relations, 29*(6), 697-712. http://dx.doi.org/10.1016/j.ijintrel.2005.07.013

Bradley, E. H., McGraw, S. A., Curry, L., Buckser, A., King, K. L., Kasl, S. V., & Andersen, R. (2002). Expanding the Andersen model: The role of psychosocial factors in long-term care use. *Health Services Research*, *37*(5), 1221–1242. doi:10.1111/1475-6773.01053

Braveman, P. (2006). Health disparities and health equity: Concepts and measurement. *Annual Review of Public Health, 27*, 167-194. doi: 10.1146/annurev.publhealth .27.021405.102103

Burnam, M. A., Hough, R. L., Karno, M. M., Escobar, J. J., & Telles, C. A. (1987). Acculturation and lifetime prevalence of psychiatric disorders among Mexican Americans in Los Angeles. *The Journal of Health and Social Behavior*, *28*, 89-102. Retrieved from http://www.jstor.org/stable/2137143

Buscemi, C. P., Williams, C., Tappen, R. M., & Blais, K. (2012). Acculturation and health status among Hispanic American elders. *Journal of Transcultural Nursing, 23*(3), 229-236.

Cabassa, L. J., Lester, R., & Zayas, L. H. (2006). “It’s like being in a labyrinth:” Hispanic immigrants’ perceptions of depression and attitudes toward treatments. *Journal of Immigrant and Minority Health*, *9*(1), 1–16.

Carrasquillo, O., Carrasquillo, A. I., & Shea, S. (2000). Health insurance coverage of immigrants living in the United States: Differences by citizenship status and country of origin. *American Journal of Public Health*, *90*(6), 917–923.

Carter-Pokras, O., & Baquet, C. (2008). What is a "health disparity"? *Public Health Reports*, *117*, 426-434. Retrieved from http://www.jstor.org/stable/4598774

Ceballos, M., & Palloni, A. (2010). Maternal and infant health of Mexican immigrants in the USA: The effects of acculturation, duration, and selective return migration. *Ethnicity & Health*, *15*, 377-396. doi: 10.1080/13557858.2010.481329

Centers for Disease Control and Prevention. 2012. *Mental health basics*. Retrieved from http://www.cdc.gov/mentalhealth/basics.htm

Cervantes, R. C., Padilla, A. M., & Salgado de Snyder, N. (1991). The Hispanic stress inventory: A culturally relevant approach to psychosocial assessment. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 3*(3), 438-447. doi:10.1037/1040-3590.3.3.438

Chang, J., Natsuaki, M. N., & Chen. C. (2013). The importance of family factors and generation status: Mental health service use among Latino and Asian Americans. *Cultural Diversity & Ethnic Minority Psychology*, *19*(3), 236-247

Chen, J., & Vargas-Bustamante, A. (2011). Estimating the effects of immigration status on mental health care utilizations in the United States. *Journal of Immigrant and Minority Health,* 13:671–680.

Comas-Diaz, L. (2006). Latino healing: The integration of ethnic psychology into psychotherapy. *Psychotherapy-River Edge-*, *43*(4), 436.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, *59*(7), 614–625. doi:10.1037/0003-066X.59.7.614

Daley, M.C., 2005. Race, managed care, and the quality of substance abuse treatment. *Adm. Policy Ment. Health,* 32, 457–476.

Draine, J., Salzer, M. S., Culhane, D. P., & Hadley, T. R. (2002). Role of social disadvantage in crime, joblessness, and homelessness among persons with serious mental illness. *Psychiatric Services, 53*(5), 565–573.

Drake, R. E., & Brunette, M. F. (1998). Complications of severe mental illness related to alcohol and drug use disorders. In M. Galanter (Ed.), Recent developments in alcoholism, Vol. 14: *The consequences of alcoholism: Medical neuropsychiatric economic cross-cultural* (pp. 285-299). New York, NY US: Plenum Press. doi:10.1007/0-306-47148-5_12

Ebin, V. J., Sneed, C. D., Morisky, D. E., Rotheram-Borus, M. J., Magnusson, A. M., & Malotte, C. K. (2001). Acculturation and interrelationships between problem and health-promoting behaviors among Latino adolescents. *Journal of Adolescent Health*, *28*(1), 62-72.

Farrelly, C., Cordova, D., Huang, S., Estrada, Y., & Prado, G. (2013). The role of acculturation and family functioning in predicting HIV risk behaviors among Hispanic delinquent youth. *Journal of Immigrant and Minority Health*, *15*(3), 476-483.

Fernandez, A., Schillinger, D., Grumbach, K., Rosenthal, A., Stewart, A. L., Wang, F., & Perez-Stable, E. J. (2004). Physician language ability and cultural competence an exploratory study of communication with Spanish-speaking patients. *JGIM: Journal of General Internal Medicine*, *19*, 167-174. doi: 10.1111/j.1525-1497.2004.30266.x

Fiscella, K., Franks, P., Doescher, M. P., & Saver, B. G. (2002). Disparities in health care by race, ethnicity, and language among the insured: Findings from a national sample. *Medical Care, 40*, 52-59. doi: 10.1097/00005650-200201000-00007

Flores, G. (2006). Language Barriers to Health Care in the United States. *New England Journal of Medicine*, *355*(3), 229–231. doi:10.1056/NEJMp058316

Fortuna, L. R., Porche, M. V., & Alegria, M. (2008). Political violence, psychosocial trauma, and the context of mental health services use among immigrant Latinos in the United States. *Ethnicity & Health, 13*(5), 435–463. doi:10.1080/13557850701837286González, H.M.,

Gonzalez, J. M., Alegría, M., Prihoda, T. J., Copeland, L. A., & Zeber, J. E. (2011). How the relationship of attitudes toward mental health treatment and service use differs by age, gender, ethnicity/race and education*. Social Psychiatry And Psychiatric Epidemiology, 46*(1), 45–57. doi:10.1007/s00127-009-0168-4

Guarnaccia, P. J., Canino, G., Rubio-Stipec, M., & Bravo, M. (1993). The prevalence of ataques de nervios in the Puerto Rico Disaster Study: The role of culture in psychiatric epidemiology. *Journal of Nervous and Mental Disease, 181*(3), 157-165.

Guarnaccia, P., Martinez, I., & Acosta, H. (2005). Chapter 2. Mental health in the Hispanic immigrant community: An overview. *Journal Of Immigrant & Refugee Services, 3*, 21-46. doi: 10.1300/J191v3n01_02

Guarnaccia, P.J., P. Parra, A. Deschamps, G. Milstein, and N. Argiles. (1992). Si Dios quiere: Hispanic families' experiences of caring for a seriously mentally ill family member. *Culture, Medicine, and Psychiatry,*16:187-215.

Guarnaccia, P., Pincay, I., Alegría, M., Shrout, P., Lewis-Fernandez, R., & Canino, G. (2007). Assessing diversity among Latinos: Results from the NLAAS. *Hispanic Journal of Behavioral Sciences, 29*, 510-534. doi: 10.1177/0

Guarnaccia, P. J., Rubio-Stipec, M., & Canino, G. (1989). Ataques de nervios in the Puerto Rican Diagnostic Interview Schedule: The impact of cultural categories on psychiatric epidemiology. *Culture, Medicine, and Psychiatry: An International Journal of Cross-Cultural Health Research, 13*(3), 275-295.

Hargraves, J. L., & Hadley, J. (2003). The contribution of insurance coverage and community resources to reducing racial/ethnic disparities in access to care. *Health Services Research*, *38*(3), 809–829.

Harris, K. M., Edlund, M. J., & Larson, S. (2005). Racial and ethnic differences in the mental health problems and use of mental health care. *Medical Care, 43*(8), 775–784.

Hawkins, J., Watkins, D. C., Kieffer, E., Spencer, M., Piatt, G., Nicklett, E. J., … Palmisano, G. (2017). An exploratory study of the impact of gender on health behavior among African American and Latino men with type 2 diabetes. *American Journal of Men's Health, 11*(2), 344–356. doi:10.1177/1557988316681125

Heeringa, S. G., Wagner, J., Torres, M., Duan, N., Adams, T., & Berglund, P. (2004). Sample designs and sampling methods for the Collaborative Psychiatric Epidemiology Studies (CPES). *International Journal of Methods in Psychiatric Research, 13*(4), 221–240.

Horevitz, E., & Organista, K. C. (2013). The Mexican health paradox expanding the explanatory power of the acculturation construct. *Hispanic Journal of Behavioral Sciences, 35*(1), 3–34.

Hough, R. L., Landsverk, J. A., Karno, M., Burnam, A., Timbers, D. M., Escobar, J. L., &

Reiger, D. A. (1987). Utilization of health and mental health services by Los Angeles Mexican Americans and non-Hispanic Whites. *Archives of General Psychiatry, 44*(8), 702–709.

Hovey, J. D., & King, C. A. (1996). Acculturative stress, depression, and suicidal ideation among immigrant and second-generation Latino adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *35*(9), 1183–1192. doi:10.1097/00004583-199609000-00016

Interian, A., Ang, A., Gara, M.A., Link, B.G., Rodriguez, M.A., & Vega, W.A. (2010). Stigma and depression treatment utilization among Latinos: Utility of four stigma measures. *Psychiatric Services,* 61:373–379.

Interian, A., Martinez, I. E., Guarnaccia, P. J., Vega, W. A., & Escobar, J. I. (2007). A qualitative analysis of the perception of stigma among Latinos receiving antidepressants. *Psychiatric Services, 58*(12), 1591.

Jacobs, E., Chen, A. H., Karliner, L. S., Agger-Gupta, N., & Mutha, S. (2006). The need for more research on language barriers in health care: A proposed research agenda. *Milbank Quarterly*, *84*(1), 111–133. doi:10.1111/j.1468-0009.2006.00440.x

Jerrell, J.M., Wilson, J.L., 1997. Ethnic differences in the treatment of dual mental and substance disorders: a preliminary analysis. *Journal of Substance Abuse Treatment.* 14, 133–140.

Jiménez, J. A., Shivpuri, S., de los Monteros, K. E., Matthews, K. A., Mills, P. J., & Gallo, L. C. (2012). Associations between socioeconomic status and catecholamine levels vary by acculturation status in Mexican-American women. *Annals of Behavioral Medicine*, *44*(1), 129-135.

Johnson, K. L., Carroll, J. F., Fulda, K. G., Cardarelli, K., & Cardarelli, R. (2010). Acculturation and self-reported health among Hispanics using a socio-behavioral model: the North Texas Healthy Heart Study. *BMC Public Health,* 10, 53. doi:10.1186/1471-2458-10-53

Judd, F., Komiti, A., & Jackson, H. (2008). How does being female assist help-seeking for mental mealth problems? *Australian & New Zealand Journal of Psychiatry, 42*(1), 24–29. https://doi.org/10.1080/00048670701732681

Katz, S. J., Kessler, R. C., Frank, R. G., Leaf, P., & Lin, E. (1997). Mental health care use, morbidity, and socioeconomic status in the United States and Ontario. *Inquiry*, *34*(1), 38–49. doi:10.2307/29772668

Keyes, K. M., Martins, S. S., Hatzenbuehler, M. L., Blanco, C., Bates, L. M., Hasin, D.S. (2012). Mental health service utilization for psychiatric disorders among Latinos living in the United States: the role of ethnic subgroup, ethnic identity, and language/social preferences. *Social Psychiatry and Psychiatric Epidemiology*. *3*, 47: 383. https://doi.org/10.1007/s00127-010-0323-y

Kim, G., Aguado Loi, C. X., Chiriboga, D. A., Jang, Y., Parmelee, P., & Allen, R. S. (2011). Limited English proficiency as a barrier to mental health service use: a study of Latino and Asian immigrants with psychiatric disorders. *Journal of Psychiatric Research*, *45*(1), 104–110. doi:10.1016/j.jpsychires.2010.04.031

Kouyoumdjian, H., Zamboanga, B. L., & Hansen, D. J. (2003). Barriers to community mental health services for Latinos: Treatment considerations. *Clinical Psychology: Science and Practice*, *10*(4), 394–422. doi:10.1093/clipsy.bpg041

Lagomasino, I.T., Dwight-Johnson, M., Miranda, J., Zhang, L., Liao, D., Naihua, D., Wells, K.B. (2005). Disparities in depression treatment for Latinos and site of care. *Psychiatric*

Services, 56(12),1517-1523.

Lara, M., Gamboa, C., Kahramanian, M., Morales, L. S., & Bautista, D. (2005). Acculturation and Latino health in the United States: A review of the literature and its sociopolitical context. *Annual Review of Public Health*, *26*, 367-397. doi: 10.1146/annurev.publhealth.26.021304.14465

Leaf, P.J., Bruce, M.L., Tischler, G.L., Freeman, D.H., Weissman, M.M., & Myers, J.K. (1988). Factors affecting the utilization of specialty and general medical mental health services. *Med Care*, 26:9–26.

Lee, S., & Matejkowski, J. (2012). Mental health service utilization among noncitizens in the United States: findings from the National Latino and Asian American Study. *Administration and Policy in Mental Health and Mental Health Services Research*, 39:406–418.

Lumansoc, R. M. (2011). Perceived health status, source of care and health outcomes of individuals with self-reported mental disorders. *Nursing Dissertations*. Retrieved from http://digitalarchive.gsu.edu/nursing_diss/11

Mackenzie, C.S., Gekoski, W.L., & Knox, V. J. (2006). Age, gender, and the underutilization of mental health services: The influence of help-seeking attitudes. *Aging & Mental Health*, *10*:6,574-582, DOI: 10.1080/13607860600641200

Mainous, A. G. III., Majeed, A., Koopman, R. J., Baker, R., Everett, C. J., Tilley, B. C., Diaz, V. A. (2006). Acculturation and diabetes among Hispanics: evidence from the 1999-2002 National Health and Nutrition Examination Survey. *Public Health Reports, 121,* 60-66.

Mendelson, T., Rehkopf, D.H. , Kubzansky, L.D. (2008). Depression among Latinos in the

United States: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 76, pp. 355-366

Miranda, A. O., Bilot, J. M., Peluso, P. R., Berman, K., & Meek, L. G. V. (2006). Latino families: The relevance of the connection among acculturation, family dynamics, and health for family counseling research and practice. *The Family Journal, 14*(3), 268–273. doi:10.1177/1066480706287805

Mojtabai, R., Olfson, M., & Mechanic, D. (2002). Perceived need and help-seeking in adults with mood, anxiety, or substance use disorders. *Arch Gen Psychiatry, 59*(1):77–84. doi:10.1001/archpsyc.59.1.77

Morales, L., Cunningham, W., Brown, J., Liu, H., & Hays, R. (1999). Are Latinos less satisfied with communication by health care providers? *Journal of General Internal Medicine, 14*, 409-417.

Mulvaney-Day, N. E., Alegria, M., & Sribney, W. (2007). Social cohesion, social support, and health among Latinos in the United States. *Social Science & Medicine, 64*(2), 477–495. doi:10.1016/j.socscimed.2006.08.030

National Alliance for Hispanic Health. (2001). *Quality health services for Hispanics: The cultural competency component*. Washington, DC: Department of Health and Human Services (DHHS Publication No. 99-21).

National Council of La Raza. (2005). *Critical disparities in Latino mental health: Transforming research into action*. Retrieved from http://www.nclr.org/index.php /publications/critical_disparities_in_latino_mental_health_transforming_research _into_action/

National Institute of Mental Health. (2015). Mental illness. Retrieved from https://www.nimh.nih.gov/health/statistics/mental-illness.shtml

Niv, N., Hser, Y.-I. (2006). Drug treatment service utilization and outcomes for Hispanic and White methamphetamine users. *Health Serv. Res.* 41, 1242–1257.

Ojeda, V., McGuire, T. (2006). Gender and racial/ethnic differences in use of outpatient mental health and substance use services by depressed adults. *Psychiatric Quarterly*. *77*(3):211–22.

Ortega, A., Rosenheck, R., Alegría, M., Desai, R. (2000). Acculturation and the lifetime risk of psychiatric and substance use disorders among Hispanics. *The Journal Of Nervous and Mental Disease. 188*. 728-35. 10.1097/00005053-200011000-00002.

Ortega, A. N., & Alegría, M. (2002). Self-reliance, mental health need, and the use of mental healthcare among island Puerto Ricans. *Mental Health Services Research*, *4*(3), 131–140.

Ortega, A. N., Rodriguez, H. P., & Vargas Bustamante, A. (2015). Policy dilemmas in Latino health care and implementation of the Affordable Care Act. *Annual Review Of Public Health, 36*, 525–544. doi:10.1146/annurev-publhealth-031914-122421

Peifer, K. L., Hu, T., & Vega, W. (2000). Help seeking by persons of Mexican origin with functional impairments. *Psychiatric Services. 51*(10), 1293-1298.

Pennell, B. E., Bowers, A., Carr, D., Chardoul, S., Cheung, G.-Q., Dinkelmann, K., Torres, M. (2004). The development and implementation of the National Comorbidity Survey Replication, the National Survey of American Life, and the National Latino and Asian American Survey. *International Journal of Methods in Psychiatric Research, 13*(4), 241–269.

Pescosolido, B., Wright, E., Alegría, M., & Vera, M. (1998). Social networks and patterns of use among the poor with mental health problems in Puerto Rico. *Medical Care, 36*(7), 1057-1072. Retrieved from http://www.jstor.org/stable/3767365

Portes, A., Kyle, D., & Eaton, W.W. (1992) Mental illness and help-seeking behaviors among Mariel Cuban and Haitian refugees in south Florida. *Journal of Health and Social Behavior, 23*(4):282–298.

Raeff, C., Greenfield, P. M., & Quiroz, B. (2000). Conceptualizing interpersonal relationships in the cultural contexts of individualism and collectivism. *New Directions for Child and Adolescent Development,* (87), 59–74.

Rebach, H., 1992. Alcohol and drug use among American minorities. In: Trime, J.E., Boleck, C.S., Niemcry, S.J. (Eds.), *Ethnic and Multicultural Drug Abuse: Perspectives on Current Research*. Haworth Press, Binghampton, NY, pp. 23–57.

Redfield, R., Linton, R., & Herskovits, M. (1936). Memorandum on the study of acculturation. *American Anthropologist,* 38, pp. 149-152

Rivera F.I., Guarnaccia P.J., Mulvaney-Day N., Lin J.Y., Torres M., Alegría M. (2008). Family cohesion and its relationship to psychological distress among Latino groups. *Hispanic Journal of Behavioral Sciences*. 30:357–378.

Schwartz, S. J., Weisskirch, R. S., Zamboanga, B. L., Castillo, L. G., Ham, L. S., Huynh, Q. et al. (2011). Dimensions of acculturation: Associations with health risk behaviors among college students from immigrant families. *Journal of Counseling Psychology, 58*(1), 27-41.

Sentell, T., Shumway, M., & Snowden, L. (2007). Access to mental health treatment by English

language proficiency and race/ethnicity. *Journal of General Internal Medicine*, *22 Suppl 2*, 289–293. doi:10.1007/s11606-007-0345-7

Snowden L.R. (2007). Explaining mental health treatment disparities: Ethnic and cultural differences in family involvement. *Culture, Medicine and Psychiatry*, 31:389–402.

StataCorp. 2017. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC

Steele, L., Dewa, C., & Lee, K. (2007). Socioeconomic status and self-reported barriers to mental health service use. *The Canadian Journal of Psychiatry, 52*(3), 201–206. https://doi.org/10.1177/070674370705200312

Substance Abuse and Mental Health Services Administration. (2013). Results from the 2012 national survey on drug use and health: Mental Health Findings, NSDUH Series H-47, HHS Publication No. (SMA) 13-4805. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2013.

Timmins, C. (2002). The impact of language barriers on the health care of Latinos in the United States: A review of the literature and guidelines for practice. *Journal of Midwifery & Women's Health*, *47*, 80-96. doi: 10.1016/S1526-9523(02)00218-0

Treviño, R. P., Treviño, F. M., Medina, R., Ramirez, G., & Ramirez, R. R. (1996). Health care access among Mexican Americans with different health insurance coverage. *Journal of Health Care for the Poor and Underserved*, *7*(2), 112–121.

Triandis, H. C., Marín, G., Betancourt, H., Lisansky, J., & Chang, B.H. (1982). Dimensions of familism among Latino mainstream Navy recruits. Technical Report No. 14. Department of Psychology, University of Illinois, Champaign.

United Stated Census Bureau, 2010 (2011, May). *2010 census shows nation's Hispanic population grew four times faster than total U.S. population.* (Release No.CB11-

CN.146). Retrieved from United States Census 2010 database: http://2010.census.gov/news/releases/operations/cb11-cn146.html

United Stated Census Bureau, 2010 (2011, May). *The Hispanic population: 2010.* (Release No. C2010BR-04). Retrieved from United States Census 2010 database: http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf

United States Department of Health and Human Services. (2001). A supplement to *Mental Health: Culture, race, and ethnicity—a supplement to mental health: A report of the surgeon general.* Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK44243/pdf/TOC.pdf

U.S. Census Bureau. (2016). Quick Facts: United States. Retrieved from https://www.census.gov/quickfacts/fact/table/US

U.S. Office of Minority Health and Health Disparities [OMHD]. (2010). *Hispanic or Latino population.* Retrieved from http://www.cdc.gov/omhd/populations/HL/hl.htm

Van Beljouw, I. M., Verhaak, P. F., Cuijpers, P., Van Marwijk, H. W., & Penninx, B. W. (2010). The course of untreated anxiety and depression, and determinants of poor one-year outcome: a one-year cohort study. *BMC Psychiatry*, *10*(1), 86. doi:10.1186/1471-244X-10-86

Vargas Bustamante, A., Fang, H., Rizzo, J. A., & Ortega, A. N. (2009). Understanding observed and unobserved health care access and utilization disparities among U.S. Latino adults. *Medical Care Research and Review*, *66*(5), 561–577. doi:10.1177/1077558709338487

Vega, W., Kolody, B., & Aguilar-Gaxiola, S. (2001). Help seeking for mental health problems among Mexican Americans. *Journal of Immigrant Health*, *3*(3), 133–140. doi:10.1023/A:1011385004913

Vega W.A., Kolody, B., Aguilar-Gaxiola, S., Alderete, E., Catalano, R., Caraveo-Anduaga, J. (1998). Lifetime prevalence of DSM-III-R psychiatric disorders among urban and rural Mexican Americans in California. *Archives of General Psychiatry*, *55*(9), 771–778. doi:10.1001/archpsyc.55.9.771

Vega, W.A., Kolody, B., Aguilar-Gaxiola, S., & Catalano, R. (1999). Gaps in services utilization by Mexican Americans with mental health problems. *American Journal of Psychiatry*, *156*(6):928–934

Vega, W. A., & Lopez, S. R. (2001). Priority issues in Latino mental health services research. *Mental Health Services Research*, *3*(4), 189–200. doi:10.1023/A:1013125030718

Vega, W. A., Rodriguez, M. A., & Ang, A. (2010). Addressing stigma of depression in Latino primary care patients. *General Hospital Psychiatry, 32*(2), 182–191. https://doi.org/10.1016/j.genhosppsych.2009.10.008

Vega, W.A., Williams, D.R., Tarraf, W., West, B.T., Neighbors, H.W. (2009). Depression care in the united states too little for too few. *Archives of General Psychiatry.* 2010;67(1):37–46. doi:10.1001/archgenpsychiatry.2009.168

Vera, M., Alegría, M., Freeman, D.H., Robles, R., Pescosolido, B., & Pena, M. (1998). Help seeking for mental health care among poor Puerto Ricans: Problem recognition, service use, and type of provider. *Medical Care, 36*(7):1047–1056.

Villatoro, A. P., Morales, E. S., & Mays, V. M. (2014). Family culture in mental health help-seeking and utilization in a nationally representative sample of Latinos in the United

States: The NLAAS. *The American Journal of Orthopsychiatry, 84*(4), 353–363. doi:10.1037/h0099844

Viruell-Fuentes, E. A., Miranda, P. Y., & Abdulrahim, S. (2012). More than culture: Structural racism, intersectionality theory, and immigrant health. *Soc. Sci. Med. 75*(12):2099–2106.

Waldstein, A. (2008). Diaspora and health? Traditional medicine and culture in a Mexican migrant community. *International Migration*, *46*(5), 95-117. doi:10.1111/j.14682435.2008.00490.x

Walker, E. R., Cummings, J. R., Hockenberry, J. M., & Druss, B. G. (2015). Insurance status, use of mental health services, and unmet need for mental health care in the United States. Psychiatric services (Washington, D.C.), 66(6), 578–584. doi:10.1176/appi.ps.201400248

Wang, P.S., Lane, M., Olfson, M., Pincus, H.A., Wells, K.B., & Kessler, R.C. (2005). Twelve-month use of mental health services in the United States: Results from the National Comorbidity Survey Replication. *Arch Gen Psychiatry*, *62*(6):629–640. doi:10.1001/archpsyc.62.6.629

Wells, K., Golding, J. M., Hough, R. L., Burnam, M. A., & Karno, M. (1989). Acculturation and the probability of use of health services by Mexican Americans. *Health Services Research, 24*(2), 237–257.

Wells, K., Klap, R., Koeke, A., & Sherbourne, C. (2001). Ethnic disparities in unmet need for alcoholism, drug abuse, and mental health care. American Journal of Psychiatry, 158(12), 2027–2032.

Wilson, E., Chen, A., Grumbach, K., Wang, F., & Fernandez, A. (2005). Effects of limited English proficiency and physician language on health care comprehension. *Journal of General Internal Medicine*, *20*, 800-806. doi: 10.1111/j.1525-1497.2005.0174.x

Woodward, A.M., Aaron, B.S., & Dwinell, A. D., (1992). Barriers to mental health care for Hispanic Americans: A literature review and discussion. *The Journal of Mental Health Administration*, *19*(3), 224–236. doi:10.1007/BF02518988

World Health Organization (WHO). (2008) Depression. Retrieved from http://www.who.int/news-room/fact-sheets/detail/depression

Young, A.S., Clap, R., Sherbourne, C.D., et al. (2001). The quality of care for depressive and anxiety disorders in the United States. *Archives of General Psychiatry. 58*(1), 55-61.

Zinn, M. B. (1982). Familism among Chicanos: A theoretical review. *Humboldt Journal of Social Relations*. Retrieved from http://psycnet.apa.org/?fa=main.doiLanding&uid=1984-17638-001

Zuvekas, S. H., & Taliaferro, G. S. (2003). Pathways to access: Health insurance, the health care delivery system, and racial/ethnic disparities, 1996–1999. *Health Affairs*, *22*(2), 139–153. doi:10.1377/hlthaff.22.2.139