Mental Health Care in McAllen Texas:

Utilization, Expenditure, and Continuum of Care

by

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Dedication

In Memory of a Very Special Person,
And My Beloved Friend

Mary H. Quinn
12 April 1977–18 December 2011

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Abstract

In 2009, Gawande published an article in *The New Yorker* that put the unknown mid-sized South Texas city of McAllen on the map. The article stated that McAllen was one of the most expensive health care markets in the country; it caused such media-frenzy that in a few days President Barack Obama (2009) began citing McAllen in his speeches for health care reform. Gawande concluded that overspending in the area was due to overutilization of medical services. The present study examined whether mental health services are overutilized based on archival data on McAllen's mental health services collected from Medicaid, Tropical Texas Behavioral Health (a McAllen area community mental health center [CMHC]), and The Behavioral Center at Doctors Hospital at Renaissance (a McAllen area private hospital). Findings yielded that diagnostic-related groups significantly impacted the average length of stay, as well as total costs for psychiatric inpatient treatment in McAllen, TX. Schizophrenia spectrum disorders required more days of treatment within the hospital than Bipolar disorders and further more days than Depressive disorders. Correspondingly, inpatient treatment of Schizophrenia spectrum disorders cost an additional $5,554.80 when compared to Bipolar disorders and $9,095.16 more than for Depressive disorders. Additionally, the readmission rate at Doctors Hospital was 26.72%, with nearly ¼ of patients being readmitted at least once, and nearly 7% had 4 or more psychiatric hospitalizations within a one-year period. This readmission rate was higher than the national average perhaps because of inadequate after-care outpatient treatment in McAllen. Medicaid data showed that Texas consistently failed to contribute any state moneys to mental health spending; and that Massachusetts saw a considerably smaller increase in mental health expenditures over a 10-year period for both inpatient and outpatient services when compared to the United States as a whole (i.e., 26% vs. 260% for inpatient and 8% vs. 239% for outpatient,

respectively). Furthermore, when compared to 2 reputable mental health care institutions (i.e., McLean Hospital and Brookline CMHC) in the Boston, Massachusetts area, McAllen's continuum of care for mental health services fell short, with McAllen lacking considerably in step-down care and assessment.

Keywords: mental health disparity, Texas mental health care, Latino mental health, Medicaid mental health expenditures, psychiatric inpatient treatment, continuum of care

Mental Health Care in McAllen Texas: Utilization, Expenditure and Continuum of Care

Chapter 1: Rationale and Conceptual Framework

June 1, 2009, *The New Yorker* published in its Annals of Medicine an article, "The Cost Conundrum—What a Texas Town Can Teach Us about Health Care" (Gawande, 2009). In the article, Atul Gawande, M.D., a Harvard-affiliated surgeon and author, denounced that Medicare spends more per beneficiary in McAllen, Texas than in any other U.S. city except Miami. Gawande (2009) declared, "McAllen, Texas is the most expensive town in the most expensive country for health care in the world" (para. 4).

Gawande (2009) reported that McAllen is the second most expensive health care market in the US, only after Miami, which has much higher labor and living costs. In 2006, Medicare spent $15,000 per enrollee in McAllen, which is nearly twice the national average. McAllen is in Hidalgo County and has the lowest household income in the country (income per capita is $12,000). In other words, Medicare spends $3,000 more per person in McAllen than the average person earns.

"McAllen costs Medicare $7,000 more per person each year than does the average city in America," according to Gawande (2009, para. 12), but the author asserted that this is not always the case. In 1992, the average cost per Medicare enrollee in McAllen was $4,891—very similar to the national average. Since then, McAllen's health care costs had grown faster than in any other market in the United States, exceeding more than $10,000 per person. Gawande went on to examine why health care costs were increasing in McAllen.

He consulted with economists who specialized in examining regional patterns of Medicare payment data at Dartmouth's Institute for Health Policy and Clinical Practice located in Hanover, New Hampshire. He also turned to two private firms (D2Hawkeye and Ingenix) to

analyze commercial insurance data for McAllen. The analysis of Medicare data by the Dartmouth Atlas Project for year 2009 resulted in a report on local and regional variation in the performance of US health care with the goal to provide interpretation of unwarranted variation that guides policy formulation and clinical improvement (Goodman, 2011). The report showed that the discrepancy was due to marked differences in the amount of care ordered for patients. When compared with patients nationwide, "patients in McAllen got more of pretty much everything—more diagnostic testing, more hospital treatment, more surgery, more home care" (Gawande, 2009, para. 30). Given these results, Gawande concluded that "the primary cause of McAllen's extreme costs was, very simply, the across-the-board overuse of medicine" (para. 31).

Although not a peer-reviewed journal, *The New Yorker* is a magazine of weekly reportage with a readership of 1,011,821 nationally, not including several other thousands internationally (Alliance for Audited Media, 2014). Gawande's article was read widely and quickly caught the attention of President Barak Obama. Gawande (2009) characterized the McAllen, TX health care system as one of poor quality and high cost, which made it synonymous with what is wrong with American health care. The article was published during President Obama's efforts to reform the national health care system. On June 8th, within a week after the publication of Gawande's article, *The New York Times* reported that Gawande's article had, "affected his [President Obama's] thinking dramatically" (Pear, 2009, para. 2). The article became required reading in the White House as President Obama summoned aides to the Oval Office to discuss it (Pear, 2009, para. 1). President Obama began citing the article in meetings with senators and reiterated, "This is what we have to fix" (Pear, 2009, para. 2). A few days later, June 11th, President Obama spoke at a town hall meeting in Green Bay, WI. Obama (2009) stated that McAllen's costs are one-third higher than those at the Mayo Clinic in Rochester, MN, yet the quality and outcomes

are worse. There were several important publications stemming from Dr. Gawande's original article, both in *The New York Times* as well as on several prominent weblogs (e.g., *Washington Post* 2009*; The New Yorker's News Desk*, 2009).

Gawande's (2009) article was influential for me, not only because of its national impact, but because, as a mental health clinician, I work in the health care field. Furthermore, McAllen, TX is my hometown where my father serves as a psychiatrist in private practice as well as in one of the city's hospitals. Having grown up in McAllen with plans to practice as a psychologist, I was concerned that my South Texas town had made the national media in such a negative way. I began to consider the systemic and societal factors that contributed to Gawande's findings.

I was also surprised with Gawande's health care findings about McAllen because during my semester break from graduate school earlier the same year (December 2008–January 2009), I had the opportunity to shadow mental health professionals at one of the newer psychiatric facilities in the area, the Renaissance Behavioral Center, a constituent of Doctors Hospital at Renaissance (DHR). DHR was one of the facilities explicitly critiqued in Gawande's (2009) article. Although the Gawande article did not address mental health services directly, what I observed about mental services during my short time at DHR appeared to be different from Gawande's claims about medical overutilization in the McAllen area.

Having returned to the South Texas mental health community after having spent the last seven years studying and working in mental health in New England, I began making comparisons between the two different mental health care systems—those in New England and South Texas. I experienced that there were fewer resources in South Texas for people in need of mental health services when compared to those in New England.

While impressed by the caliber of the multidisciplinary teams that treat patients with psychopharmacological and psychotherapeutic interventions at the Renaissance Behavioral Center, I considered that the average stay per patient, 5.8 days (DHR, 2009), to be short. I found that the national average of psychiatric hospitalization in 2009 was 7.5 days (Substance Abuse and Mental Health Services Administration, 2011). When I saw how well patients responded to the inpatient treatment at the Renaissance Behavioral Center, I was excited and hopeful about patient prognoses. My optimism dwindled, however, when I asked the staff about follow-up care for patients at the time of discharge.

Regarding follow-up care, the staff hesitated or struggled to respond to my question, but nearly all answered similarly. The staff believed that many patients leaving the hospital would probably not continue with follow-up mental health care, particularly psychotherapy. When I asked why that was the case, most staff members answered that many patients could not afford outpatient treatment in private practice settings. I then inquired about community mental health clinics and organizations with reduced-fee or sliding-fee scales. I was informed that these types of centers were practically non-existent in the McAllen vicinity.

At first, I thought this information was erroneous, given that McAllen is in Hidalgo County, which has consistently been ranked as one of the poorest counties in the United States over the past 20 years (U.S. Census Bureau, 2013). The following questions surfaced: (a) Could it be true that a part of the country that desperately needs subsidized services does not have the types of clinics in place for low-income populations? and (b) How could there be more community mental health clinics in other parts of the country with higher socio-economic levels?

What was most troublesome for me were the prognoses for individuals following discharge from hospitalization. Through my doctoral training in clinical psychology and mental

health service experience, I understood that psychiatric hospitalizations are usually temporary interventions, typically lasting a few days with the purpose of stabilization of symptoms. Outpatient clinical services, conversely, are the mainstay treatment for the majority of people suffering from mental illness.

So what happens, I wondered, to mental health patients once they were discharged from acute hospitalizations in South Texas? What factors contribute to patients continuing with treatment outside an institutional setting? What is the availability or accessibility to resources for patients upon discharge in this part of the country? And how many patients seek such services? These clinician musings I transformed into the following research questions.

Research Questions

The research questions of interest to the study are as follows:

1. How expensive is the McAllen area for mental health care compared to the rest of the US?
2. How much was spent in 2011 per adult enrollee in McAllen, TX for mental health care?
3. Does McAllen offer state-of-the-art treatments and technologies that are current with recent research and discoveries in the mental health field?

Table 1 below provides a summary of Gawande's findings on health care in McAllen Texas. Corresponding numbered questions have been matched to each finding and will be the object of examination in this proposed study.

Table 1

Gawande's findings on health care and Irigoyen's research questions on mental health care

Gawande's Findings on Health Care in McAllen, TX	Irigoyen's Corresponding Research Questions on Mental Health Care in McAllen, TX
1. McAllen is the most expensive town in the U.S. for health care.	1. How expensive is McAllen for mental health care compared to the rest of the U.S.?
2. In 2006 Medicare spent $15,000 on health care per enrollee in McAllen, TX.	2. In 2011 how much was spent per adult enrollee in McAllen, TX for mental health care?
3. McAllen has and offers virtually all of the state of the art treatments and technology that you'd find at Harvard, Stanford, and the Mayo Clinic.	3. Does McAllen have and offer state-of-the-art technology that are current with the most recent evidence-based work in the mental health field?

Definition of Terms

Evidence-based practice in psychology. The American Psychological Association (APA) began an initiative to encourage mental health providers to incorporate the latest and best research or evidence into clinical practice in combination with clinical expertise and within the context of patient characteristics, culture, and preferences. They defined this as evidence-based practice in psychology (EBPP; American Psychological Association, 2006).

Access to health care. Definitions of *access to health care* have been driven by health care system concerns. One of the earliest definitions of access to health care is the availability of resources, whenever and wherever the patient needs them (Freeborn & Greenlick, 1973). In 1993, the Institute of Medicine defined access to health care as the timely use of personal health services to achieve the best possible health outcomes. Andersen and Davidson (2001) defined access to health care as the actual use of personal health services and everything that impedes or facilitates their use. For the purpose of this study, I utilize Andersen and Davidson's definition.

Health disparity. The National Institutes of Health (NIH) workgroup provided the federal government's first definition of disparity as differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States (U.S. Department of Health and Human Services, 1999). From this definition came United States Public Law 106-525, or the Minority Health and Health Disparities Research, as well as the Education Act that authorized the National Center for Minority Health and Health Disparities to provide a legal definition of health disparities. A population is identified as a health disparity population if there is a significant disparity in the overall rate of disease incidence, prevalence, morbidity, mortality, or survival rates in the population as compared to the health status of the general population (U.S. Government, 2000). This definition will also be used as a framework for this study.

Summary

Having grown up in McAllen, TX, I was intrigued but also alarmed to hear about Dr. Atul Gawande's (2009) findings on health care in my geographic area. Furthermore, as a psychologist-in-training, I am very interested in examining whether Gawande's findings translate to mental health care as well. I gathered archival data on adult mental health care expenditures

and utilization rates by public information request to Medicaid, Tropical Texas Behavioral Health (a local community mental health center), and The Renaissance Behavioral Center at Doctors Hospital at Renaissance (a local private hospital) located in the McAllen, TX area. These archived data were analyzed and findings were compared with Dr. Gawande's findings on general medicine health care. Similarly, these archived data sets also provided insight to better understand the access to and utilization of mental health services in the McAllen, TX area. The implications of mental health services based on the data analyses in Chapter 5 are addressed.

Chapter 2: A Review of the Literature

This chapter informs the reader of the latest trends and statistics on the prevalence of mental illness and the availability and utilization of mental health services in the United States. This information provides a reference to understand mental health services in the McAllen, TX area. The literature on mental health service utilization, including issues of disparity and access to services, is also presented. Furthermore, recent advancements in mental health reform are described. A discussion follows on narrowing disparities in the mental health care for Latinos. Last, this chapter presents Andersen's (1997) Behavioral Model of Health Services Use, which was utilized in conceptualizing the study.

Prevalence of Mental Illness in the US

Over the past 20 years, research on mental health disorders has increased (Center for Disease Control and Prevention [CDC], 2010). Owing to a growing knowledge of mental illness, many researchers and organizations have been following trends and statistics in hopes to understand the prevalence of mental illness. The common goal of advocates of mental health treatment is to improve mental health through prevention, as well as ensure access to appropriate mental health services for the mentally ill (NIMH, 2008). Below are some key recent studies that have led to an awareness of the prevalence of mental illness in the United States and its negative effects on our nation's well-being.

Woodwell and Cherry (2004) reported 40 million doctor visits for mental health disorders in 2002. Also in 2002, DeFrances and Hall (2004) found that there had been 2.5 million psychiatric hospital discharges with an average length of stay of 7 days. For that same year, Arias and colleagues (2003) reported that there had been 31,655 suicides attributed to psychiatric disorders. For the year 2006, Colpe (2009) reported that 10.9 million or 44 % of adults with

severe and persistent mental illness (SPMI) engaged in mental health treatment. Of those, 39% took psychotropic medication, 27.2% participated in outpatient services, and 3.0% received inpatient treatment (Colpe, 2009).

More recently, between 2008 and 2009, the annual prevalence of mental health disorders for adults 18 years and older in the US was 44.7 million, corresponding to a rate of 19.8% of the adult U.S. population (SAMHSA, 2012). The rate of SPMI among adults was 4.6% or 10.4 million individuals. Depression was the most common diagnosis, accounting for 14.8 million people or about 6.7% of the U.S. population in a given year (Kessler, Chiu, Demler, & Walters, 2005; Kessler, Merikangas, & Wang, 2007). Within the last year, out of the 44.7 million American with mental illness, 60% received treatment (SAMHSA, 2012).

In 2008, mental health disorders were deemed a major public health concern when they became a leading cause of disability that carries high financial costs (NIMH, 2008). The U.S. Census Bureau (2005) estimated that 13 million adults (6%) in the US live with a disabling mental illness; furthermore, 25% of all life lost to disability and premature mortality was also accounted for by mental health disorders. Consider the fact that suicide is the 11th leading cause of death in the US, accounting for approximately 30,000 deaths per year (CDC, 2010).

By taking into account significant rates of mental illness and how it affects individuals' lives and work, it is evident that mental health has to be taken seriously in the United States. It seems pertinent to give mental health concerns the importance they merit and determine whether mental health care is available and is being used by the American public as needed.

Mental Health Service and Utilization

Both level of severity and number of mental health disorders are determinants for using mental health services (Bao & Sturm, 2004; Scheffler, Zhang, & Snowden, 2002) and have the

strongest effect on utilization (Albizu-Garcia, Alegria, Freeman, & Vera, 2001). In addition, there have been many studies conducted on external factors that influence need and use of mental health services (e.g., Alegria et al., 2002; Bao & Sturm, 2004; Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999). These authors examined the impact of sociodemographic variables, including race and ethnicity, the utilization of mental health services. What follows is a review of some of the sociodemographic studies.

Racial and ethnic disparities in utilization. Disparities between need and use of mental health services are greatest among poor racial and ethnic minority groups (Bao & Sturm, 2004; Alegria et al., 2002; Vega et al., 1999). Latinos and African Americans have significantly lower use of mental health services when compared to their Caucasian counterparts, even though low utilization is incongruent with their higher needs (Alegria et al., 2002; Scheffler et al., 2002; Vega et al., 1999). Specifically, Scheffler and Miller (1991) found that Caucasian individuals with mental health needs used more outpatient services, while African Americans used more inpatient ones, a relationship that remained even after controlling for income. Alegria and colleagues (2002) found that African Americans who were not poor also showed significantly less mental health services use than Caucasians of the same income category. Garb (2010) interpreted that higher numbers in African American inpatient treatment may be caused by social factors (e.g., low client income and education as well as therapist prejudice) that influenced mental health professionals' clinical judgment. As such, mental health professionals' diagnoses tended to be less accurate for African Americans. Low usage rates by African Americans have been attributed to fewer financial resources in any income category, greater mistrust of the healthcare system, low availability of minority providers, and experiences of racism within the healthcare system (Alegria et al., 2002).

For Latinos, low use of mental health services is attributed to low English language fluency, cultural differences, less access to Medicaid specialty services, differences in recognition of mental health problems, and lower quality of mental health care (Alegria et al., 2002). Other factors found to contribute to lower utilization rates for Latinos are the use of natural healers and more nurturing support systems (Vega et al., 1999).

In 2001 (U.S. Department of Health and Human Services, 2001), the U.S. Surgeon General published a supplemental report, entitled *Mental Health: Culture Race and Ethnicity—A Supplement to Mental Health: A Report of the Surgeon General*. This report brought much-needed national attention to addressing disparities in mental health care for underserved ethnic and racial minority groups. In his report, the Surgeon General concluded that the greatest burden of mental illness in the US befalls the largest ethnic and racial minority groups (i.e., African Americans, American Indians, Asian Americans, and Latinos). Since his report, more importance has been placed on documenting and understanding why such disparities occur. Due to significant advances in research on mental health disparities for Latinos, encouraging developments have been made with regards to lessening disparities in mental health care for this particular minority group (see NESARC, Grant et al., 2004; NCS-R, Kessler et al., 2004; NSAL, Jackson et al., 2004; NLAAS, Alegria et. al., 2004).

Income disparity related to need and utilization. Income has been found to be positively associated with using mental health services and to be the strongest determinant of mental health status (Rosen, Tolman, & Warner, 2004; Williams & Collins, 1995). Individuals with higher levels of education are the least likely to have a need for mental health services; yet when the need arises, they seek treatment more frequently (Rosen et al., 2004). What type of insurance an individual has also influences utilization of mental health services. Private

insurance plans have historically been restrictive in the coverage of mental health treatment (Bao & Sturm, 2004). When private health insurance plans are inclusive of mental health services, an increased access to outpatient care is noted (Goldman, McCulloch, & Sturm, 1998). Furthermore, having any type of health insurance is positively related to using both inpatient and outpatient mental health services (Albizu-Garcia et al., 2001).

Disparity by geographic location. A few studies have identified variations in sociodemographic factors as predictors of disparity across different states in the US. There is, however, limited research investigating the impact of geographic factors on the use and need of mental health services. Sommers (1989) found that geographic location influences mental health services utilization when sociodemographics, need, availability, and accessibility are controlled for. When compared to the Midwest, the geographic regions of the Northeast, South, and West have less mental health use (Alegria et al., 2002). Areas that have "stressful environments, particularly a poverty-ridden urban one, [create] proportionally more mental ill-health" (Philo, 2005, p. 586). Industrialized and urban areas have greater access to and demand for mental health services (Scheffler et al., 2002). Variations in service use between urban and rural patients have been attributed to less availability or accessibility of mental health services in rural areas (Chumbler, Cody, Booth, & Beck, 2001; Sullivan, Jackson, & Spritzer, 1996). In rural areas, availability of mental health professionals is usually limited, so general practitioners usually are the first professionals whom individuals in rural areas seek for mental health treatment (Chumbler et al., 2001). Many times, rural residents must travel great distances in order to seek mental health services (Chumbler et al., 2001). Furthermore, since individuals living in rural areas are more likely to know one another, there is heightened stigma owing to fear of loss of confidentiality and anonymity about receiving local mental health services (Chumbler et al.,

2001). Geographic variations such as these have been linked to public mental health policy and have recently led to significant changes in U.S. healthcare policy.

Mental Health Care Reform

Changes in U.S. healthcare policy and healthcare systems have occurred over the years due to mental illness becoming a growing public health concern (Andersen, Rice, & Kominski, 2007). As noted previously, mental health affects large numbers of individuals in the United States and is, therefore, a significant constituent of the health care system, one of this country's leading economic industries. Besides the capacity to cause negative economic effects on society, mental illness, particularly if left untreated, can carry serious societal repercussions, for example, lower-functioning individuals, separation or problems within the family or support systems, educational and occupational problems, homelessness, problems with the legal system, and even premature mortality (American Psychiatric Association, 2000).

Given the breadth of social and economic issues associated with mental illness, it seems important to be able to manage resources efficiently so as to deliver advantageous alternatives within the mental health care system. The U.S. government has noted the ineffective use of mental health treatment and has passed legislation to address a national systemic problem.

In 1963, The Community Mental Health Center Act attempted to improve the delivery of services to people who were socially and economically disadvantaged (Rochefort, 1984). Later, in 1978, the President's Commission on Mental Health restated the need for mental health services delivery to groups who were not socially privileged (Worthington, 1992). The U.S. Surgeon General's report in 1999 stated that more than 54 million Americans had a mental disorder, yet fewer than 8 million received treatment (U.S. Department of Health and Human Services, 1999). The Surgeon General's report suggested that improving delivery of

community-based mental health services could serve as a method towards advancing mental health equality. Subsequently, The President's New Freedom Commission on Mental Health (2002) was created to examine health services delivery systems. One of the Commission's goals was to eliminate disparities in availability of resources and in outcomes with the aim of facilitating mental health utilization in communities (Administration of George Bush, 2002).

Despite the aforementioned gains in the advancement of mental health parity, many individuals in this country continue to struggle with poor accessibility to services. For example, in 2009, just over half (6.6 million) of the 10.4 million individuals with received treatment. That means there are 3.8 million Americans with SPMI who did not receive treatment (SAMHSA, 2012).

In an attempt to tackle such problems, legislators, policy makers, and practitioners have begun to place a stronger emphasis on providing treatment in the community (Andersen et al., 2007). Stepped care models are a good example of an attempt to use a community mental health approach to maximize efficiency related to resource allocation for treatment (Davison, 2000). This approach is based on the logic that all patients need neither the same type nor the same intensity of intervention, and it advocates for the least restrictive treatment based on the patient's individualized needs (Sobell & Sobell, 2000). Stepped-care models provide lower cost interventions first, with more intensive and costly interventions reserved for those insufficiently helped with initial ones (Haaga, 2000). This model also lends itself to be stepped down from more intensive/restrictive levels of care to less intensive/restrictive ones (Sobell & Sobell, 2000).

Besides moving toward more of a community approach to address mental health service, organizations such as the American Psychological Association (APA) have stressed the importance of implementing EBPP (APA, 2006). In 2005, the APA Council of Representatives

adopted a policy statement on EBPP, in which they defined EBPP as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (APA, 2006, p. 57). APA's definition closely parallels the Institute of Medicine's statement that "evidence-based practice is the integration of best research evidence with clinical expertise and patient values" (Institute of Medicine, 2001, p.147). APA states that the purpose of EBPP is to promote effective psychological practice as well as enhance public health by applying empirically supported principles of psychological assessment, case formulation, therapeutic relationship, and intervention when working with individuals (APA, 2006).

Increased emphasis on the use of empirical data to guide treatment resulted in the creation of task forces that generated guidelines for evidential support of psychological treatments. The rationale for an increased emphasis on empirically supported practice rests on data indicating that patient outcomes are superior when treatments with empirical support are implemented. It has been suggested that using lists or tables of EBPP for specific mental disorder conditions facilitates the use of these treatments by clinicians with limited time to research the literature (Chambless & Ollendick, 2001).

See Table 2 for a sample list of psychological treatments deemed as evidence-based practice (Chambless & Ollendick, 2001) and approved by the APA. This table will serve as a guide to report whether APA-approved treatments are being implemented by McAllen, TX mental health care systems.

Table 2

Well-established and probably efficacious empirically validated treatments by condition.

Treatments	Conditions						
	Anxiety Disorders	Mood Disorders	Substance Disorders	Psychotic Disorders	Eating Disorders	Personality Disorders	Sleep Disorders
Cognitive Therapy		●	✓				
Behavior Therapy		●	✓				
Cognitive Behavioral Therapy	●	●	✓	●	●		●
Brief Psychodynamic Therapy	✓	✓	✓				
Interpersonal Therapy		●			●		
Problem-Solving Therapy		●					
Dialectical Behavioral Therapy						●	
Acceptance and Commitment Therapy	✓	✓		✓			
Exposure Therapy	●						
Family Focused Therapy		●			●		
Group Therapy	●				✓		
Applied Relaxation	✓						●
Eye Movement Desensitization and Reprocessing	●						
Systematic Desensitization	●						
Motivational Interviewing			●				
Psychoeducation		●					
Paradoxial Intention							●
Prize-Based Contingency Management			●				
Social Skills Training				●			
Family Education				●			
Token Economy				●			
Seeking Saftey	●		●				
Assertive Community Treatment			●				

Note. ● = Well-Established Treatments ✓ = Probably Efficacious Treatments. This table was composed from Chambless and Ollendick's (2001) research on Empirically Supported Therapies. Support for a given treatment is labeled Well-Established if well-designed studies conducted by independent investigators converged to support a treatment's efficacy. Research support is labeled Probably Efficacious if one well-designed study or two or more adequately designed studies supported a treatment's efficacy. In addition, it is possible for the Well-Established and the Probably Efficacious thresholds to be met through a series of carefully controlled single-case studies. For a full description of the criteria, readers are referred to Chambless and Ollendick (2001).

Addressing Disparity in Mental Health Care for Latinos

Having recently surpassed African Americans (38.9 million), Latinos, comprising 16.3% (50.5 million) of the population, have become the largest ethnic/racial minority group in the United States (Humes, Jones, & Ramirez, 2011). Therefore, it is of particular importance to

address disparities in mental health care for the Latino population.

Some key studies to consider are the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) and the Collaborative Psychiatric Epidemiology Surveys (CPES), both considered among the very best investigations published in the last decade (Lopez, Barrio, Kopelowicz, & Vega, 2012). These surveys have significantly advanced information on mental health disparities for Latinos. A component of the CPES, the National Latino and Asian American Study (NLAAS; Alegria et al., 2004) found that based on prevalence rates, Latino Americans as an overall group, with Mexican Americans as the largest subethnic group (NESARC; Grant et al., 2004), have significantly lower lifetime prevalence rates of mental health disorders than non-Latino Whites. Cultural factors such as close-knit families have been speculated to contribute to lower prevalence rates for Latinos.

The NLAAS and NESARC authors (Alegria et al., 2004, 2008; Grant et al., 2004), however, found that lifetime prevalence rates for any mental health disorder varied significantly across Latino subgroups, from Puerto Ricans with the highest rate (37.4%), to Mexicans (29.5%), Cubans (28.2%), and other Latinos (27%). It was also found that immigrant or nativity effect could be clearly observed for Latinos with any lifetime mental health disorder. For example, 23.8% of foreign-born Latinos experienced mental illness at some point in their lives, while the rate was significantly higher (36.8%) for the US-born Latinos (NLAAS; Alegria et al., 2007). For adults of Mexican origin, 28.5% of the foreign-born dealt with mental illness, while the US-born did so at a much higher rate of 47.6% (NESARC; Grant et al., 2004). However, when disaggregated, Latino subgroups like Puerto Ricans and Cuban Americans did not consistently reflect the immigrant or nativity effect (Alegria et al., 2008). Therefore, the variability of lifetime prevalence rates and immigrant or nativity effect across Latino subgroups

point to the importance of the differential social and historical contexts of Latino subgroups (Gil & Vega, 1996).

Mexican Americans in McAllen, TX. McAllen is located at the southern tip of Texas, approximately five miles from the Mexican border. Given its proximity to Mexico, most Latinos in the area are of Mexican origin. According to the 2010 U.S. Census, McAllen, Texas ranked 5th in the nation in highest population percentage of Hispanics or Latinos; out of its 129,877 residents, 84.6% identified as Hispanic or Latino (Ennis, Rios-Vargas, & Albert, 2011). Noting the aforementioned variability in prevalence rates among the different Latino subgroups and because Mexican Americans comprise such a prominent group in McAllen's population, it is crucial to take into account the latest psychological literature pertaining to Mexican Americans when examining McAllen's mental health care expenditures, accessibility, and utilization rates.

The disaggregation of the Latino subgroups, with closer examination of specific areas of need and quality of care, has revealed that more attention needs to be paid to improving the quality of care for Mexican Americans (Lopez et al., 2012). For example, Mexican-origin adults and non-Latino Whites have similar one-year prevalence rates of major depressive disorder, 8.0% and 8.3%, respectively, and severity ratings that suggest at least equal mental health needs, with Mexicans Americans appearing to have even lower lifetime rates of depression than non-Latino Whites (Lopez et al., 2012). With regard to chronicity, however, Mexican Americans were more likely to experience recurrent major depressive episodes when compared to their non-Latino White counterparts (Lopez et al, 2012). Similarly, significant disparities could be noted for the delivery of evidence-based treatments for depression to Mexican Americans. Mexican Americans received ESTs at a rate of 12.1% while non-Latino Whites did at 23.1% (Gonzalez, Wassim, Whitfield, & Vega, 2010).

Information on Interventions with Latinos

Griner and Smith's (2006) meta-analyses found that Interventions conducted in clients' native language for the less acculturated were twice as effective as interventions conducted in English. This finding strongly supports therapeutic interventions conducted in clients' preferred language. Moderating effects were found across participant age, gender, ethnicity, and acculturation level. Latino populations were highly likely to speak Spanish, to be immigrants, and to remain in lower socioeconomic status for years after immigration. Interventions with senior Latino participants had effect sizes of greater magnitude than studies with participants of younger age. Older Latino populations tended to be less acculturated than younger populations. Latino participants with low levels of acculturation had an average effect size that was twice as large as studies in which the Latino participants showed moderate levels of acculturation. Griner and Smith further emphasized that there is a need for rigorous outcome studies on specific target populations, settings, and patients that are currently underrepresented in the existing evidence-based literature.

La Roche, D'Angelo, Gualdron, and Leavell (2006) developed and assessed the Culturally Competent Relaxation Intervention (CCRI) with 25 Latino adults in a pilot study. The CCRI uses an allocentric (collectivistic), rather than an idiocentric (individualist), self-orientation. The Beck Anxiety Inventory (BAI) and Individualism–Collectivism Scale (INDCOL) were used in conjunction with a demographic questionnaire and a weekly log for treatment adherence. Participants met in a group setting, rather than individually, for eight, weekly, one-hour sessions. During the first 30 minutes, participants talked informally and reviewed psychoeducational material. During the last 30 minutes, participants learned and

practiced a relaxation exercise (i.e., diaphragmatic breathing, progressive muscle relaxation, and guided imagery). The authors found that the level of collectivism—measured by the INDCOL—was related to the number of times that the participants utilized the allocentric imagery exercise—which was encouraged to be used as many times as possible following the second session. Of interest, however, was a nonsignificant correlation between the use of the idiocentric image exercise and individualism, which was presented following the first session and used for the week leading up to the second session. The authors explained that this non-significance about individualism partially explains client and cultural match therapy; however, there was not enough evidence to fully substantiate this conclusion. Reductions in anxiety were found via correlating number of allocentric imagery exercises and pre-post measurement of anxiety. Limitations of the study included (a) the correlational nature of the study, (b) the fact that other variables which may have contributed to reductions in pre-post anxiety were not assessed, (c) the non-representativeness of the sample, and (d) that the CCRI intervention did not completely extinguish anxiety symptoms.

Comaz-Dias (2006) explained that interpersonal therapy was found to be effective in alleviating depression among Latinos when culturally modified to include the relationship values of *familismo* (the tendency to extend kinship relationships beyond the nuclear family boundaries) and *personalismo* (preference of personal contact and presence in interaction). Collectivistic clients also frequently require therapeutic techniques that reflect the mind-body connection, which may include the use of complementary and alternative medicines (Comaz-Dias, 2006). Further, Latino clients prefer an empowerment component because therapies that profess to be decontextualized and apolitical may lead patients to believe that they are the sole cause of their suffering (Comaz-Dias, 2006). *La Raza* emphasizes “political consciousness, activism, and

empowerment" and is very important in the worldviews of many Latino immigrants (Comaz-Dias, 2006). Some Latino clients endorse a mestizo worldview (grounding an identity of color into a collective self) and seek to achieve *sabidura*, an existential type of wisdom involving the perception of life setbacks as opportunities for personal and spiritual development. Other core elements implicated in the Latino worldview are contextualism, interconnectedness, and magical/supernational realism. Traditional Latino patients prefer *cuento therapy* (using folktales within a social learning approach), *testimonio* (a verbal healing journey) and the use of *dichos* (Spanish proverbs or sayings; Comaz-Dias, 2006). Traditional clients discuss *espiritus* (spirits) and *santos* (saints) as important components of Latino folk healing (Comaz-Dias, 2006).

Similar to Comaz-Dias (2006), Lakes, López, and Garro (2006) suggest that clinicians discern what is at stake in the client's local social world to determine what is culturally important to the client as well as what to focus on in therapy. Incorporating the client's perspective allows an understanding of the client's individual experience. The client is empowered and a collaborative spirit is promoted that enhances the therapeutic alliance. Clinicians are better able to cross cultural divides by recognizing the importance of their clients' local worldview, family supports, community, and religious group. Individual identity is interwoven with familial and social structures because family and social hierarchies and loyalties typically remain powerful throughout the lifetime.

How Therapists Can Address Stigma

The literature (e.g., Roysircar, 2009) shows clients of diverse backgrounds are hesitant to seek mental health treatment. Ethnic minority clients often only seek mental health treatment when their symptoms are severe (e.g., major depression or suicidality). Even when in treatment, the dropout rate is high. The multicultural therapist needs to be aware of this pattern of high

attrition. First, seeking mental health services might go against the cultural norms of an individual. For instance, an individual's cultural norms may stigmatize a psychological problem and question why an individual would pay someone to hear a problem rather than managing the problem within the family of origin (Roysircar, 2009). Second, the therapist might be unfamiliar with the client's worldview, which creates a powerful barrier between the client and the therapist (Roysircar, 2009). Overall, multicultural clients are more likely to remain in treatment when intervention strategies are congruent with their values and beliefs (Roysircar, 2009). Clients may be passive and expect the professional provider to do the job rather than being actively engaged in carrying out their own treatment. Cultural minority clients need psychoeducation on what is counseling process, client satisfaction, therapy outcome, and the type of treatment they will undergo (Roysircar, 2009).

The Behavioral Model of Health Services Use

The theoretical basis for this study is Andersen's Behavioral Model of Health Services Use (Andersen, 1995), one of the most frequently used frameworks for analyzing factors associated with patient utilization of health care services (Phillips, Morrison, Andersen, & Aday, 1998). Andersen's (1968, 1995) Behavioral Model was initially developed more than 40 years ago and has evolved over time with revisions and additions in response to emerging issues in health policy and health service delivery. Andersen's (1995) updated model has been informed by developments in health services research and medical sociology. Because the Behavioral Model is a framework for analysis rather than a mathematical model, it does not dictate precise variables and methods that must be used. The appropriateness and complexity of variables will vary depending on the extent of prior research, the research question, the purpose of the study, and data availability (Phillips et al., 1998).

As seen in Figure 1 below, the Behavioral Model contends that health care utilization outcomes are affected by three factors: contextual characteristics, individual characteristics, and health behaviors. These factors directly and indirectly affect the probability of individuals using health services (Andersen, 1995).

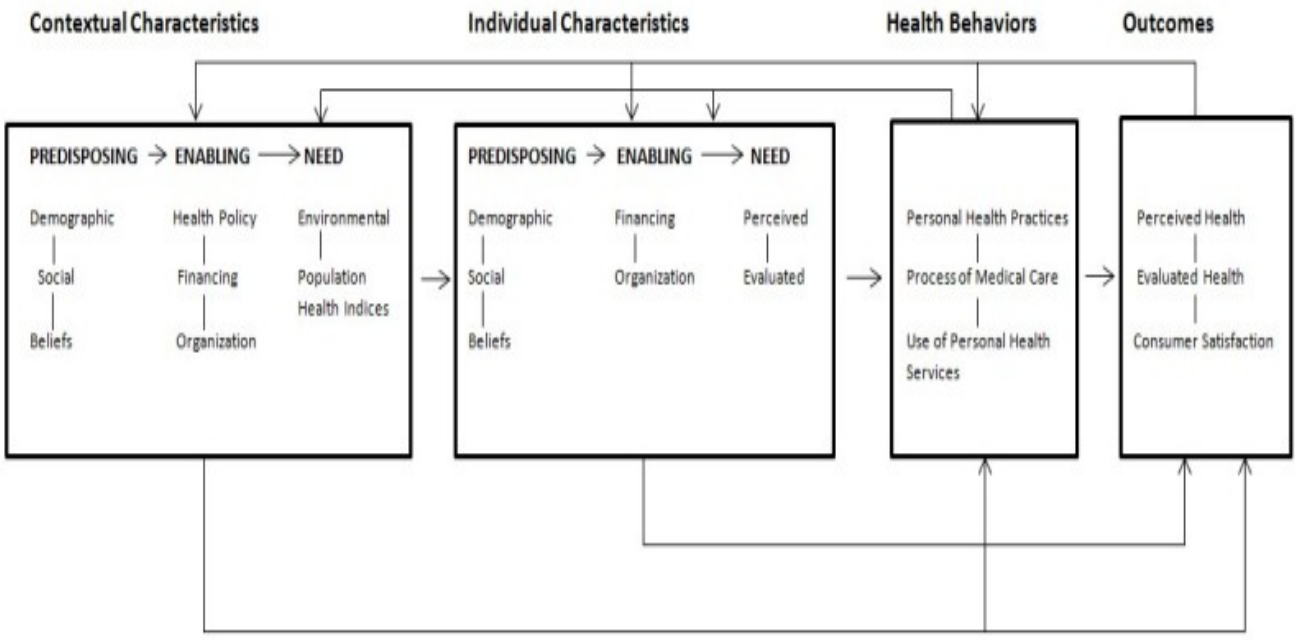

Figure 1. Andersen's behavioral model of health services use. This figure is a reproduction of Andersen's (1995) Behavioral Model.

The framework presented in Figure 1 suggests that improving access to care is best accomplished by focusing on both contextual and individual determinants. The contextual factors examined in the study informed the circumstances and environment of mental health care access in McAllen, TX. They included health organizations (i.e., Renaissance Behavioral Center, Tropical Texas Behavioral Health) and insurance data (i.e., Medicaid) as well as community characteristics. The individual determinants taken into account included patient demographic information (i.e., race/ethnicity, gender), insurance, and mental health diagnosis (e.g., Major Depressive Disorder, Bipolar Disorder, etc.).

Andersen's (1995) model suggests that the major factors determining access to health care services of both contextual and individual characteristics are divided in the same way: (a) existing conditions that predispose people to use or not use services, (b) enabling conditions that facilitate or impede use of services, and (c) need or conditions laypeople or health care providers recognize as requiring medical treatment. The model emphasizes contextual factors, recognizing the importance of community, structure and process of providing care, and realities of a managed care environment. However, the ultimate focus of the model remains on the individuals' use of health care services and the resulting outcomes regarding their health and satisfaction with services (Andersen, 2008). Below is a more detailed overview of the dimensions of access defined according to components of the Andersen's model and how access might be improved for each dimension.

Contextual predisposing characteristics. Demographic characteristics can include the age, gender, and marital status composition of a community. Social characteristics at the contextual level describe either how supportive or how detrimental communities might be to an individual's health and access to health care services. Measures for these social characteristics

may include education level, ethnic and racial composition, employment level, and crime rate. Similarly, beliefs refer to community or organizational values, cultural norms, and prevailing political perspectives regarding how health care services should be organized, financed, as well as made accessible to the population (Andersen et al., 2007).

Contextual enabling characteristics. Public health care policy is made in all branches of government (i.e., Legislative, Executive, and Judicial), at all levels from local to national, and consists of decisions pertaining to health or influencing the pursuit of health care. Decision makers—such as executives from managed health care organizations, accrediting agencies, and quality assessment organizations—can also dictate public policy from the private sector (Andersen et al., 2007).

Financial characteristics include contextual measures of resources potentially available to pay for health care services, for example, income. Other types of financial characteristics are incentives to purchase or provide services, such as, rates of health insurance and prices of medical care. Included here are also per capita expenditures for individuals' health services (Andersen et al., 2007).

Furthermore, organization at the contextual level includes the number and distribution of health care service facilities and personnel as well as how they are structured. Structure includes supply of services in the community, such as patient-to-physician ratio and hospital beds-to-population ratio. Structure can also include how medical care is organized in a particular institution, for example, office hours, location, provider diversity, utilization and quality control, and outreach programs (Andersen et al., 2007).

Contextual need characteristics. Environmental need characteristics include health-related measures of physical environment, such as the quality of housing, water, and air.

Other measures suggesting a healthy environment might include injury or death rates from motor vehicle accidents, homicides, and illegal weapons (Andersen et al., 2007).

In Figure 1, arrows drawn from the contextual characteristics indicate that they may influence health behaviors and outcomes in multiple ways. They can work through individual characteristics; for example, increasing Medicaid programs can lead to previously uninsured children to be covered by health insurance, therefore increasing their use of health care services. Contextual characteristics can also influence health behaviors and outcomes directly, such as, when community health clinics lead to increased use of services by low-income persons (Andersen et al., 2007). Understanding the nature of contextual influences on access to health care can present many analytic challenges but can also allow for important new insights into how to improve access to care (Andersen, 2008).

Individual predisposing characteristics. Inherent demographic factors, such as sex and age may suggest the likelihood of individuals needing health care services. Social factors may determine a person's status in the community as well as his or her ability to cope with problems and seek out resources. Such factors may include race, ethnicity, education, and occupation. Likewise, an individual's social networks may facilitate or impede access to services. Health beliefs include values, attitudes, and knowledge people have about health and health care services that can influence perceptions of need as well as use of health care services (Andersen et al., 2007).

Individual enabling characteristics. Health care financing refers to income available to an individual to pay for services. Financing is affected by the effective price of health care, that is, whether one possesses or does not possess health insurance (Andersen et al., 2007). The organization of health care services for individuals describes whether or not a person has a

regular source of care and the nature of that source (e.g., private doctor, community clinic, hospital care). Transportation and travel and waiting time for care are also enabling characteristics to consider (Andersen et al., 2007).

Individual need characteristics. Perceived need is how people view their own general health and functional state, as well as how they experience and respond to symptoms of a health condition. The decision to seek or not seek medical care is based on perceptions of the magnitude and degree of a health problem or symptom. Perceived need is a social phenomenon that is largely explainable by social characteristics, such as, education, race, ethnicity, and health beliefs, such as health knowledge and attitudes about health care (Andersen et al., 2007).

Alternatively, evaluated need depends on professional judgment and objective measurement of an individual's physical status and need for medical care (e.g., temperature, blood pressure, psychological diagnoses). Evaluated need, however, is neither simply nor primarily a valid and reliable measure of science; it also encompasses a social component and varies with new medical findings and evolving technology in the field (Andersen et al., 2007). In short, perceived need helps to better account for the care-seeking process and adherence to a medical regimen, while evaluated need is more closely related to the type and amount of treatment that is administered upon presenting to a medical care provider.

Health behaviors. Health behaviors are practices on an individual's part that influence their health status. Diet, exercise, consumption of alcohol and tobacco, and adherence to medical regimens are some examples of health behaviors. For behavioral health some examples could include medication compliance, sleep regimen, and completion of therapy homework assignments. Medical care is the behavior of providers interacting with patients in the process of care delivery. Some process measures might include patient counseling and education, ordering

of tests or procedures, prescription drugs, as well as quality of provider-to-patient communication (Andersen et al., 2007).

According to Andersen et al. (2007), "Use of personal health services is the essential component of health behaviors in a comprehensive model of access to care" (p. 8). The purpose of the original behavioral model was to predict health services use, measured by units of physician ambulatory care, hospital inpatient services, and dental care visits. Andersen (1968) hypothesized that predisposing, enabling, and need factors would have differential abilities to explain utilization depending on the type of service that was examined. For example, inpatient services would be used in response to more serious problems and conditions that are primarily explained by need and demographic characteristics, while dental services would be explained more so by social conditions, health beliefs, and enabling resources.

Although specific measures are likely to be more informative, global measures, such as number of doctors' visits, continue to play an important role. It is global measures that are used to assess overall effects of health policy changes over time (Andersen, 2008).

Outcomes. An individual's perceived health status is one type of outcome of health behavior and contextual and individual characteristics. Perceived health status can depend on various factors, in addition to the use of personal health services, including all contextual factors as well as an individual's demographic and social characteristics, health beliefs, and personal health practices. Perceived health status indicates the extent to which a person can live a comfortable, functional, and pain-free life. Perceived health status can be measured by activities of daily living, reports of general perceived health status, as well as disability (Andersen et al., 2007).

In contrast, evaluated health status must be determined based on a professional's judgment as well as established clinical standards. Patient physiology and function tests as well as diagnosis and prognosis regarding their condition are examples of such measures (Andersen et al., 2007). According to Andersen and colleagues, the greatest outcome validation for improved access is lessening individual needs previously measured and evaluated. Consumer satisfaction is how individuals report feeling about health care received. This is judged by patient ratings, which can include waiting time, travel/transportation, communication with providers, and care received (Andersen et al., 2007).

Essential to the model presented in Figure 1 is feedback, which is depicted by arrows from outcomes to health behaviors, individual characteristics, and contextual characteristics. Feedback provides insight about how access could be improved and can occur at the community, institutional, and even at the national level (Andersen et al., 2007).

Andersen's (1995; 2007) Behavioral Model of health service utilization can be placed within a broader psychological theory of systems called the bioecological model. The interactions of the individual client with contexts at multiple levels are explicated in five concentric systems that organize the relative influences of contextual influences on the client; this theory is called the ecological perspective (EP; Bronfrenbrenner, 1995). The concentric structures are as follows. First, the individual system includes the interactions of the client's own multiple identities, gender role beliefs, personality, biology, developmental status, interests and occupation, social make-up, and every-day life, all of which function at the center of interpenetrating contexts and are influenced most directly by interpersonal relationships. Second, the microsystem, the next level of proximity, consists of local groups of which the client is a member. It includes the family, school, work, peer groups, religious institutions as well as the

counseling center where the client is seeking help. Third, is the mesosystem which includes the interactions of the individual's local groups, such as family, neighborhood, school, place of employment, place of worship, city communities, large organizations, and broader social institutions. The mesosystem also includes the interaction between the mental health profession, systems of education, work, and group organizations. Fourth, the exosystem, includes the context of social policies that promote/advocate for parity across health care, law, education, and employment. Fifth is the macrosystem encompassing all subordinate systems (1 through 4) and represents the broader sociocultural mores and includes values of cultural groups and societal-level responses that effectively structure life implicitly or explicitly for members of society, including the client. The macrosystem structures societal experiences and functions at all levels. The sixth system, the chronosystem, represents changes over time in all the five systems.

Thus the systems are interpenetrating, interactive, and change with time and history. As a therapeutic tool, EP provides a template for therapists to conceptualize the multiple layers of a client's problems and, thus, create appropriate interventions at each level of the client's interactions. EP is consistent with multicultural assessment and counseling (Roysircar & Pignatiello, 2011). Although individuals have genetically based propensities for behavior, whether and how these propensities are enacted within an individual's life is likely to be moderated by the individual's interactions with the five contexts and changes of time.

Summary

Annual prevalence rates for mental health disorders in the US have been on a steady rise over the past 20 years. Because mental illness often creates, or brings with it, other social and economic problems, it has been deemed a public health concern in this country, calling for mental health care reform with major changes in U.S. health care policy and system since 2008.

It is important to note, however, that many factors may be influencing the rise in prevalence of mental illness. Thus, it should not be assumed that there are more people with mental illness than in previous years. For example, the rise in prevalence may be due to an increase of medicalization of ordinary problems; this may occur when clinicians over-diagnose or more readily assign *Diagnostic and Statistical Manual* (DSM) diagnoses in order to be able to provide services. This may be the case for individuals with third party medical insurances (e.g., Medicaid, BlueCross BlueShield, etc.) that require certain diagnoses be given for services to be covered, and thus, rendered to the individual. The rise in pharmaceutical advertising and prescribing may also play a significant role in the increase in prevalence of mental health disorders. Therefore, I pose the question: Is prevalence of mental health disorders truly on the rise, or are the aforementioned social factors accountable for the noted increases of mental health prevalence in the U.S. over the years? Or perhaps, are both the social factors and mental health prevalence rates increasing simultaneously, as both influence one another?

Upon review of the relevant literature, it appears that despite gains in the advancement of health care, mental health parity continues to be an issue affecting access and utilization of mental health services. This is especially true for individuals with such sociodemographic variables as, being an ethnic minority, being of low-socioeconomic status, or living in an underserved or more rural geographic region, all of which are characteristic of many individuals living in the McAllen, TX area.

This study set out to explore whether individuals in McAllen are currently experiencing disparity when it comes to mental health access and utilization, since according to the literature, it is at risk given its sociodemographic makeup. The study used local and national expenditure estimates collected from Medicaid, as well as cost and utilization data from a McAllen

community mental health center and a local private hospital. Local and national mental health data sets were analyzed using descriptive statistics and tests of difference, and findings are reported in Chapter 4.

Chapter 3: Method

This chapter provides an overview of the methodology for the present study. The patient sample from which the archival data were derived is first described. Next, information is given on the sources of archival data, both from the public and private sectors. Subsequently, the procedures and instrumentation are stated, followed by the study's research hypotheses and one research question. Last, the design for data analyses is presented. The estimates of the study, presented in Chapter 4, provide an overview of mental health treatment spending and utilization locally as well as nationally.

Patient Sample

The patient sample was comprised of adults treated for mental health services in Texas' Hidalgo County during year 2011 at The Renaissance Behavioral Center at Doctors Hospital at Renaissance (DHR), DHR's inpatient psychiatric hospital. The DHR's patient sample (N =1,280) had a mean age of 45, made up of 644 males and 636 females. As expected, given that South Texas is predominantly populated by Latinos, the majority of patients in the TTBH sample (79%) identified as Latino. Among other racial and ethnic groups, 17% identified as White, 0.7% as Black, 0.1% Asian, 0.06% Native American, 0.02% Pacific Islander, 1% as more than one race, 0.3% as other. Two percent did not identify any race.

Patients' insurance coverage. The medical insurance coverage for the patients varied greatly. Some patients had private insurance (i.e., BlueCross BlueShield, Aetna, Humana), while others were indigent with no health coverage. Other patients had Medicare and/or Medicaid coverage. Patients with both Medicare and Medicaid are referred to as Dual Eligibles, meaning they received both Medicare and Medicaid benefits, in which case Medicare was their primary insurer with Medicaid as a backup. Other dual eligible patients had a Medicare supplement or

were members of a Health Maintenance Organization (HMO), in which case that insurer was the secondary insurer to Medicare; Medicaid, then, become the tertiary insurer, picking up expenses that Medicare and the HMO did not. Yet another type of patient was the uninsured who could afford to pay for services privately, out-of-pocket.

Data Sources

Archival data were requested from four sources. Information on each source is presented below. Unfortunately, Medicare did not provide the data requested for mental health services. Aggregate data were provided by both Medicaid and Tropical Texas Behavioral Health (TTBH), while DHR provided a very complete sample of raw data allowing for some inferential statistics to be computed.

Medicaid. Medicaid is a jointly funded state and federal government program for individuals with disabilities or members of low-income families with children. In order to qualify as disabled, a person must have a documented long-standing severe physical or mental impairment. Not all low-income individuals qualify for Medicaid. Some groups, such as non-disabled single adults and undocumented immigrants are not eligible for Medicaid coverage. Also, some individuals with SPMI may be homeless or too impaired to complete the Medicaid enrollment process (Crowley & O'Malley, 2006).

Medicare. Medicare is a national social insurance program that provides health insurance for Americans ages 65 and older, as well as to younger people with specific disabilities. There are several ways to qualify for Medicare, which has four parts, each with its own requirements.

Medicare Part A, also known as Medicare hospital insurance, is available to most people 65 or older based on their or their spouse's employment social security benefits or railroad retirement benefits. Others eligible for Medicare Part A are those under 65 with amyotrophic

lateral sclerosis (Lou Gehrig's Disease) and people with permanent kidney failure (i.e., recipients of maintenance dialysis or kidney transplants). Medicare Part B, or Medicare medical insurance, is available to almost anyone who is 65 or older or to those who are under 65 but eligible for Medicare hospital insurance by paying a monthly premium. Medicare Part C, also known as Medicare advantage plans, is for people with Medicare Parts A and B who can choose to receive all of their health care services through an approved provider organization under Part C. Medicare D, or Medicare prescription drug coverage, is available to anyone who has Medicare Part A, B, or C; however, joining Medicare Part D is voluntary and requires an additional monthly fee (Social Security Administration, 2012).

Tropical Texas Behavioral Health (TTBH). TTBH began as a small operation in the basement of an old hospital building, but has grown significantly, employing 460 full-time and 28 part-time employees during the 2010 fiscal year (TTBH, 2011). TTBH's catchment area now covers more than 3,000 square miles including Hidalgo, Willacy, and Cameron Counties. In 2010, the total estimated population for the catchment area was 1,203,123 people: 774,769 in Hidalgo, 22,134 in Willacy, and 406,220 in Cameron (U.S. Census, 2010).

The Renaissance Behavioral Center at Doctors Hospital at Renaissance. DHR first opened its doors as a small ambulatory surgical center in 1997. Presently, it is a 506-bed acute facility providing a range of medical services with over 50 specialties and subspecialties, making DHR the largest physician-owned facility in the United States. DHR is set apart from other local hospitals because it is owned and managed by actively practicing physicians. As a result, decisions critical to patient care, such as, nursing staff-to-patient ratio and types of equipment purchased, are made by physicians treating patients on the frontline.

The Renaissance Behavioral Center is one of DHR's specialty hospitals, providing mental health services. It is an 88-bed facility that provides short-term, solution-oriented treatment options for children, adolescents, adults, and seniors struggling with mental illness, substance abuse, or eating disorders. The present study only used data from the adult and geriatric units. The Adult and Geriatric Psychiatric Programs at the Renaissance Behavioral Center offer crisis intervention, patient stabilization, patient evaluation, protection from self-harm, short-term therapy, symptom-focused interventions, psychopharmacology, and cognitive behavioral treatments. In addition, the Renaissance Behavioral Center offers a 24-hour therapeutic environment, nursing, psychological counseling/therapy, psychiatry, activity/occupational therapy, case management, and transcranial magnetic stimulation (TMS) therapy.

Procedures

Public Information Requests were made to the offices of Medicaid and Medicare to attain archived data of local and national mental health utilization rates and expenditures for year 2011. Similarly, archived data on local expenditure and utilization rates were also requested from DHR and TTBH through the Public Information Act.

The study used 2011 archived data of South Texas' adult mental health services; these data were then compared with the national data for the year 2011. The study focused on two public sector payer categories, Medicare and Medicaid, as well as two provider categories, a private hospital and a community mental health center. The study used (a) McAllen area and national expenditure estimates collected from Medicaid and (b) cost and utilization data from The Renaissance Behavioral Center at DHR. In addition, the McAllen data set was compared with Dr. Atul Gawande's findings on overutilization and overspending of medical health care in

McAllen, TX.

The study provides local (i.e., McAllen, TX) and national estimates on spending and utilization for services related to the diagnosis and treatment of mental health disorders. It describes estimates for the year 2011. Expenditures focus on costs for mental health treatment, not on the *burden of mental health illness*. Burden-of-illness studies (see Kessler et al., 2005) include costs not directly related to treatment, such as the impact of mental illness on productivity, societal costs linked to drug-related crimes, or housing and other subsidies assisting clients with mental health disorders. The scope of the study does not include the physical consequences of mental health disorders. For example, physical consequences of mental health problems may include cirrhosis, trauma, and HIV or other infectious diseases. Expenditures are presented overall for the whole mental health system, as reported by Medicaid data, as well as by particular local providers (i.e., Renaissance Behavioral Center).

Complex issues were dealt with when combining the data to produce comprehensive estimates, such as assuring consistency across data sources, avoiding duplicate accounting, and adjusting for incomplete observations. From the data, utilization rates and expenditures were analyzed either by (a) Current Procedural Terminology (CPT) code for Medicaid and TTBH data, or by (b) Diagnosis-related Group (DRG) for the hospital data. A CPT is a number assigned by the American Medical Association to every task or service a medical practitioner provides to a patient (e.g., 90806 Individual psychotherapy, outpatient, 45–50 minutes, face-to-face). The CPT codes are then used by public and private insurance companies to determine the amount of reimbursement that a practitioner or organization will receive per service. Alternatively, the DRG system is used to classify illnesses according to diagnosis and treatment. DRGs are used to group all charges for hospital inpatient services into a single bundle for payment. DRGs provide

a means for relating the type of patients a hospital treats with the costs incurred by the hospital. DRGs are also used to determine how much insurance organizations pay a hospital, predetermining a rate per case.

Instrumentation

Data measurement was both actuarial and statistical. Several different tables were created by facility (DHR and TTBH) or insurance type, reporting findings on expenditures and utilization. These tables are found in the results reported in Chapter 4. Mental health expenditures and utilization rates were drawn from total revenues and numbers reported by facility and by payment sources.

Similar tables were constructed to display the findings of one research question that was asked. These tables are also found in Chapter 4. They compare local (i.e., McAllen, Texas) availability of mental health services along a continuum of care, with availability of services at two Massachusetts organizations (McLean Hospital and Brookline Community Mental Health Center), which I believe holds a high standard of care for mental health treatment in the United States. Standard of care is defined as "the watchfulness, attention, caution, and prudence that a reasonable person in similar circumstances would exercise in providing care to a patient" (Legal Dictionary, 2014). Therefore, standard of care in mental health settings usually consists of guidelines that specify appropriate interventions based on scientific evidence used in the treatment of a given psychiatric condition.

Research Hypotheses and Research Question

The research hypotheses for the study were:

- Utilization rates of mental health services are lower among adults in McAllen, TX than they are nationally.

- Expenditures for mental health services for adults in McAllen, TX are lower than they are nationally.

One research question for the study was:

- To what extent does McAllen offer a continuum of care for mental health? (i.e., encompassing treatment from standard outpatient care, up to intensive psychiatric hospitalization locked-facilities, and everything in between.)

Data Analyses

Upon collecting the archival data, the researcher determined that the appropriate data analysis would consist of descriptive statistics (i.e., frequencies, percentages, distributions, central tendencies, and standard deviations) as well as observations made from that data, such as re-admission rates at the psychiatric DHR hospital. These findings are reported in the Chapter 4. Two Kruskal-Wallis omnibus tests were conducted to determine if a Diagnostic Related Group (DRG) influenced (a) the patient's average length of stay (ALOS) and (b) total costs incurred for treatment.

Continuum-of-care data were also sought from both of the local facilities, DHR and TTBH. These data are also reported and accounted for in a descriptive narrative fashion and displayed in tables in Chapter 4. These findings state what the lay-of-the-land is, as far as offering descriptions of what is available for mental health treatment in the McAllen, TX area. The information was compared to what was available at McLean Hospital in Belmont, MA and Brookline Community Mental Health Center in Brookline, MA. These findings are displayed in Tables 12 and 13 in Chapter 4.

Summary

The estimates in this study report on local versus national utilization and spending on

treatment for mental health disorders for the year 2011. It was hoped that the information sought would increase providers, policy makers, and consumers' understanding of (a) what the nation spends on mental health services and treatment, (b) which payers fund that treatment, (c) who delivers that treatment, and (d) how expenditures and services may vary by geographic location. Examining this might bring forth some insight as to improving accountability, capacity, and effectiveness in order to ensure that resources are being used effectively and efficiently throughout state and community programs that serve clients in the McAllen, TX area.

Chapter 4: Results

This chapter presents the data gathered and describes the results that tested the study's hypotheses and one research question. The chapter begins with a summary of demographic characteristics of local data collected. Next, some of the results that consist of descriptive statistics of national and local (i.e., McAllen, TX) mental health data on mental health utilization and expenditures are described. Differences between group means, such as variation among and between groups are also reported. Last, a comparison is made for continuum of care data for both community mental health and inpatient mental health services which is presented in tables.

Demographic Characteristics

This section summarizes the main characteristics of the data collected in the McAllen Texas area, at DHR and TTBH, and presents it in tables and charts. The main characteristics found and reported below include patient trends in age, sex, race/ethnicity, and payer mix.

DHR demographic data. The tables and charts below summarize the demographic information of the patient sample from DHR. Demographics provided included age and sex. Inpatients at DHR had a mean age of 44 and an equal admittance percentage of males (49.69%) to females (50.31%).

Table 3

Descriptive Statistics for Patients Admitted to DHR Based on Age

	Age
Mean	44.31
Median	42
Mode	18
Minimum	18
Maximum	96
SD	20.55

Note. All figures in this table are presented in years.

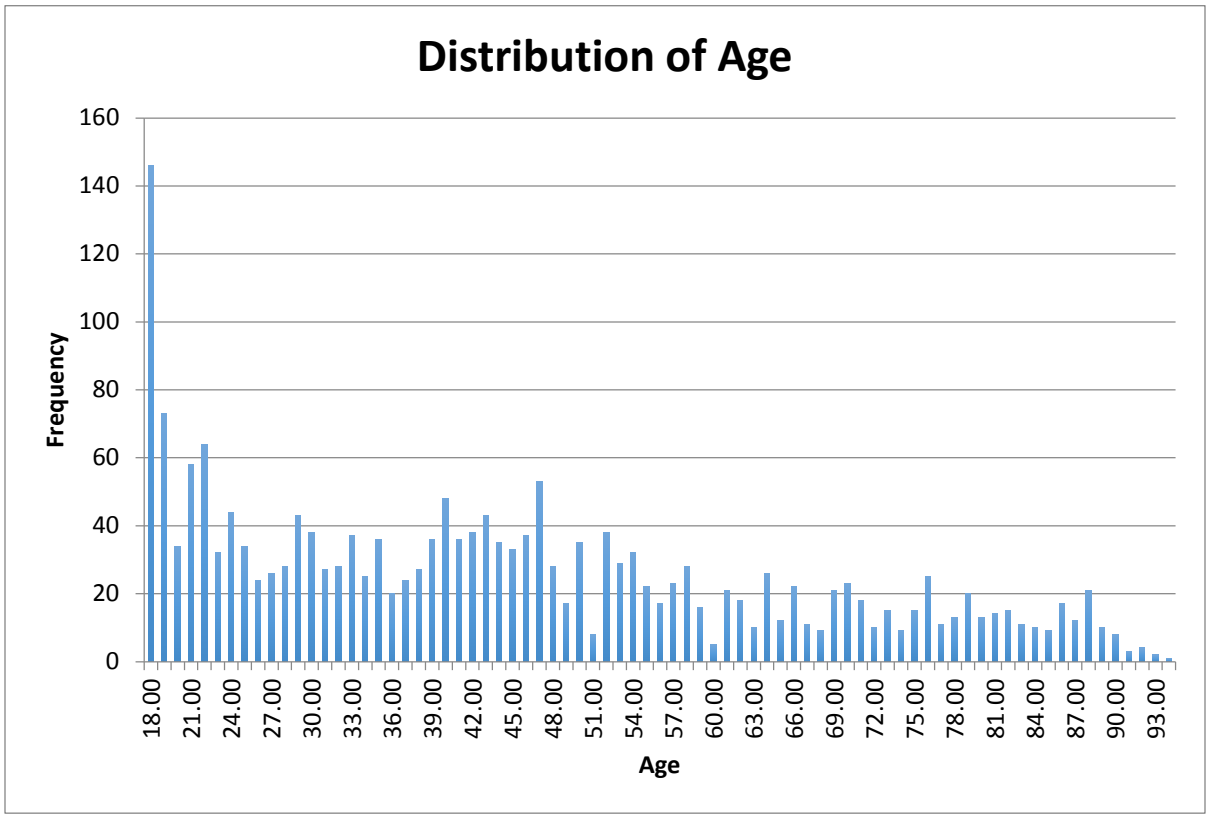

Figure 2. Age distribution with a positive skew for patients admitted to DHR for the year 2011.

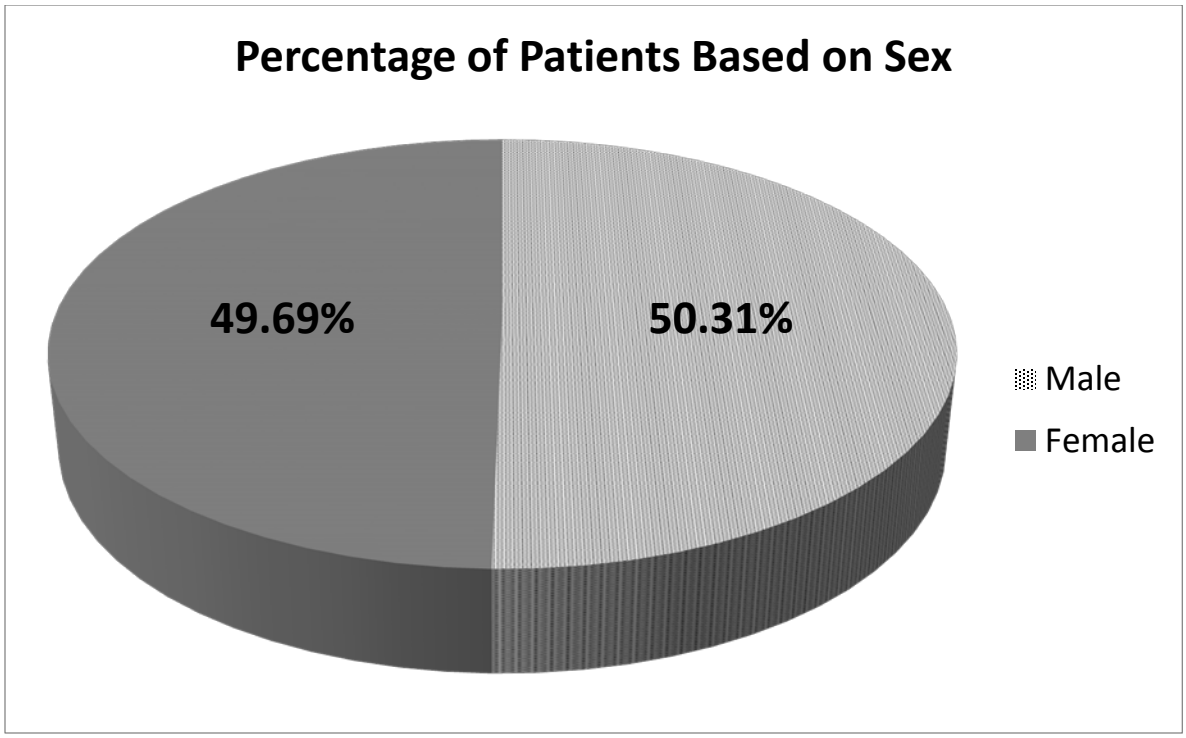

Figure 3. Equal Percentage (50%) of male and female patients admitted to DHR inpatient psychiatric unit for the year 2011.

TTBH demographic data. The figures below summarize the demographic information of the patient sample from TTBH. Demographics provided include race/ethnicity and payer mix type. It is significant to note that TTBH reported an overwhelming majority of patients treated (79%) at their CMHC identified as Hispanic/Latino. TTBH's payer mix reflects their funding comes from different sources, with The Department of State and Health Services (DSHS) as their biggest funder providing 41.29% of their revenue, and Medicare and Medicaid combined as their second largest providing 39.97% for year 2011. DSHS is a state governmental agency whose mission is to improve health and well-being in Texas. Fifty percent of DSHS's budget is general revenue related (from the Texas state legislature) funds, 43% is from federal funds, and the remaining 7% from other funds. Seventy percent of the DSHS general revenue is allocated to mental health services and is distributed to community agencies and hospitals that have contracts with DSHS (Department of State Health Services, 2014).

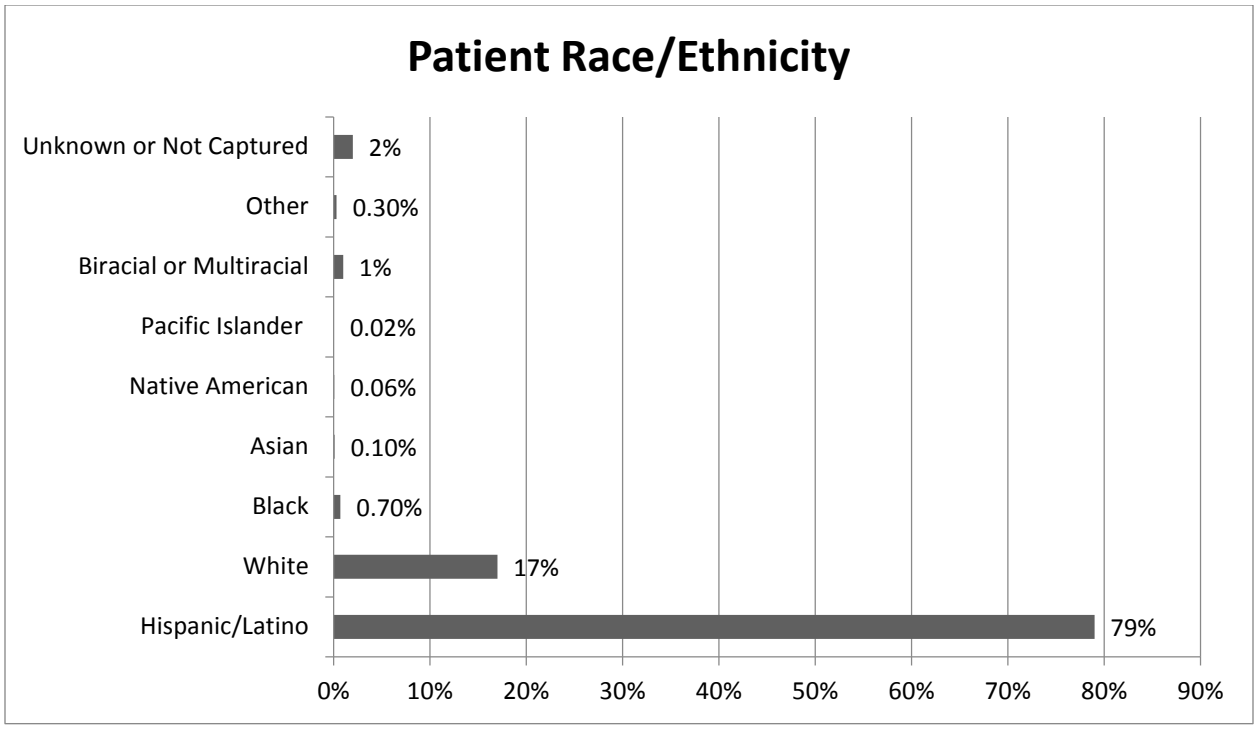

Figure 4. Hispanics/Latinos comprised an overwhelming 79% of patients receiving mental health services at TTBH for year 2011.

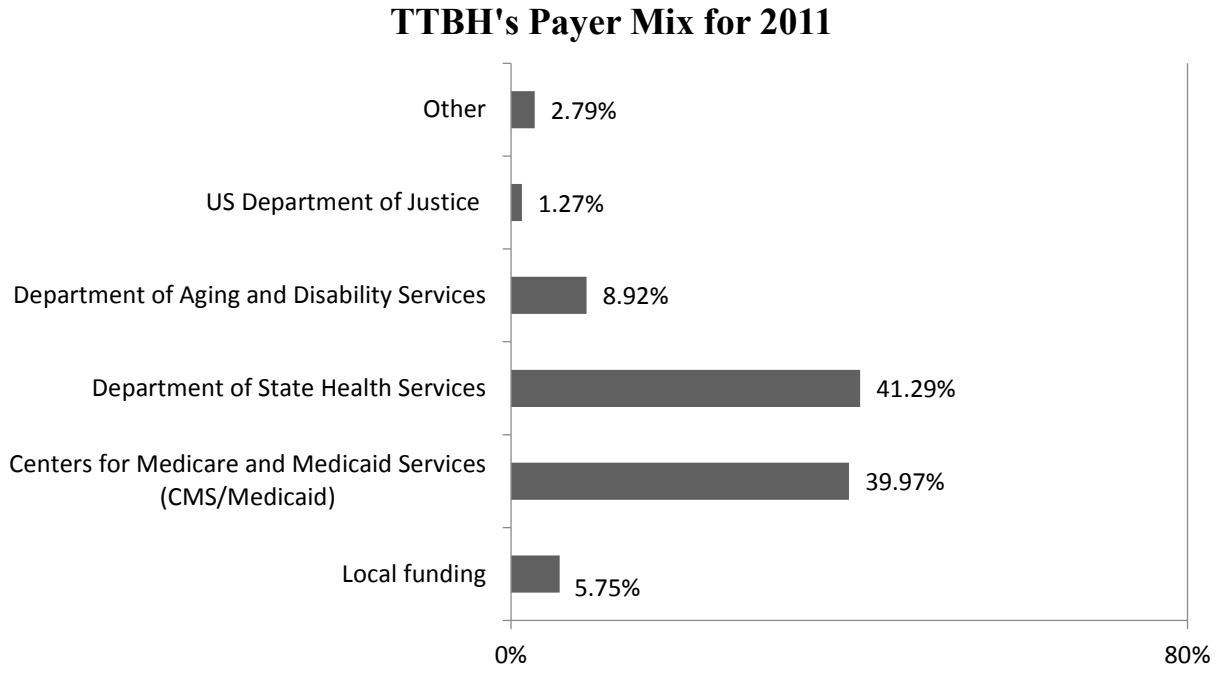

Figure 5. The largest funders of mental health services at TTBH for year 2011 were the Department of State Health Services (41.29%) and CMS/Medicaid (39.97%).

Data Analysis for Research Hypothesis 1: Mental Health Utilization

The study's first research hypothesis was: *Utilization rates of mental health services are lower among adults in McAllen, TX than they are nationally.* Two Kruskal-Wallis omnibus tests were conducted to determine if Diagnostic Related Group (DRG) influenced (a) a patient's average length of stay (ALOS) and (b) total costs incurred for treatment. Hospitals use DRGs in order to identify the "products" they provide (e.g., group therapy). This system was developed for reimbursement purposes and, therefore, groups' different diagnoses requiring similar services were grouped together (i.e., all depressive neurosis), in order to know how much to bill. DRG Codes, their names, and their diagnostic descriptions can be found below in Table 4.

Table 4

Diagnostic Related Codes and Diagnostic Descriptions as Coded in the Doctors Hospital at Renaissance Data

DRG Code	DRG	Diagnostic Description
880	Acute Adjustment Reaction & Psychosocial Dysfunction	Anxiety state, unspecified Panic disorder without agoraphobia Unspecified nonpsychotic mental disorder
881	Depressive Neuroses	Adjustment disorder with depressed mood Depressive disorder, not elsewhere classified Dysthymic disorder
882	Neuroses Except Depressive	Adjustment disorder with anxiety Adjustment disorder with mixed anxiety and depressed mood Adjustment disorder with mixed disturbance of emotions and conduct Posttraumatic stress disorder
883	Disorders of Personality & Impulse Control	Explosive personality disorder Intermittent explosive disorder Other personality disorders Schizoaffective disorder, unspecified Simple type schizophrenia, unspecified
884	Organic disturbances & mental retardation	Autistic disorder, current or active state Dementia, unspecified, with behavioral disturbance Mood disorder in conditions classified elsewhere Other persistent mental disorders due to conditions classified elsewhere Psychotic disorder with delusions in conditions classified elsewhere Senile dementia with delirium

		Senile dementia with delusional features Senile dementia with depressive features Senile dementia, uncomplicated Unspecified persistent mental disorders due to conditions classified elsewhere Unspecified senile psychotic condition Vascular dementia with delirium Vascular dementia with delusions Vascular dementia with depressed mood Vascular dementia, uncomplicated
885	Psychoses	Bipolar disorder, unspecified Bipolar I disorder, most recent episode (or current) depressed, mild Bipolar I disorder, most recent episode (or current) depressed, severe, specified Bipolar I disorder, most recent episode (or current) depressed, severe, without Bipolar I disorder, most recent episode (or current) depressed, unspecified Bipolar I disorder, most recent episode (or current) manic, moderate Bipolar I disorder, most recent episode (or current) manic, severe Bipolar I disorder, most recent episode (or current) manic, severe, without melancholy Bipolar I disorder, most recent episode (or current) manic, unspecified Bipolar I disorder, most recent episode (or current) mixed, moderate Bipolar I disorder, most recent episode (or current) mixed, severe Bipolar I disorder, most recent episode (or current) mixed, severe, without melancholy Bipolar I disorder, most recent episode (or current) mixed, unspecified Bipolar I disorder, most recent episode (or current) unspecified Bipolar I disorder, single manic episode, severe, specified as with psychosis Bipolar I Disorder, single manic episode, severe, without mention of psychosis Bipolar I disorder, single manic episode, unspecified Catatonic type schizophrenia, chronic Catatonic type schizophrenia, chronic with acute exacerbation Catatonic type schizophrenia, unspecified Delusional disorder Depressive type psychosis Disorganized type schizophrenia, chronic with acute exacerbation Major depressive disorder, recurrent episode, mild Major depressive disorder, recurrent episode, moderate Major depressive disorder, recurrent episode, severe, specified as with psychotic symptoms

		Major depressive disorder, recurrent episode, severe, without mention of psychotic symptoms Major depressive disorder, recurrent episode, unspecified Major depressive disorder, single episode in full remission Major depressive disorder, single episode, moderate Major depressive disorder, single episode, severe, specified as with psychosis Major depressive disorder, single episode, severe, without mention of psychosis Major depressive disorder, single episode, unspecified Other and unspecified bipolar disorders, other Other and unspecified reactive psychosis Other specified episodic mood disorder Other specified types of schizophrenia, unspecified Paranoid type schizophrenia, chronic Paranoid type schizophrenia, chronic with acute exacerbation Paranoid type schizophrenia, subchronic with acute exacerbation Paranoid type schizophrenia, unspecified Schizoaffective disorder, chronic Schizoaffective disorder, chronic with acute exacerbation Schizoaffective disorder, subchronic with acute exacerbation Schizoaffective disorder, unspecified Schizophrenic disorders, residual type, chronic Schizophrenic disorders, residual type, chronic with acute exacerbation Schizophrenic disorders, residual type, subchronic with acute exacerbation Unspecified episodic mood disorder Unspecified psychosis Unspecified schizophrenia, unspecified
886	Behavioral & developmental disorders	Attention deficit disorder with hyperactivity Attention deficit disorder without mention of hyperactivity impulse control disorder, unspecified Other specified conduct disorder, not elsewhere classified unspecified disturbance of conduct
897	Alcohol/drug abuse or dependence w/o rehabilitation therapy w/o mcc	Alcohol abuse, continuous Alcohol abuse, unspecified Cocaine abuse, unspecified Combinations of drug dependence excluding opioid type drug, unspecified Combinations of opioid type drug with any other drug dependence, unspecified

	Drug induced mood disorder
	Drug withdrawal
	Opioid abuse, unspecified
	Opioid type dependence, unspecified
	Other and unspecified alcohol dependence, unspecified
	Other specified drug dependence, unspecified
	Other, mixed, or unspecified drug abuse, unspecified
	Sedative, hypnotic or anxiolytic dependence, unspecified
	Unspecified drug-induced mental disorder

Data from DHR yielded positively skewed distributions for both Average Length of Stay (ALOS) and Total Charges. Given that the data were not normally distributed, as displayed in Figure 6 and Figure 7, nonparametric statistics were utilized (i.e., Kruskal-Wallis and Mann-Whitney U tests).

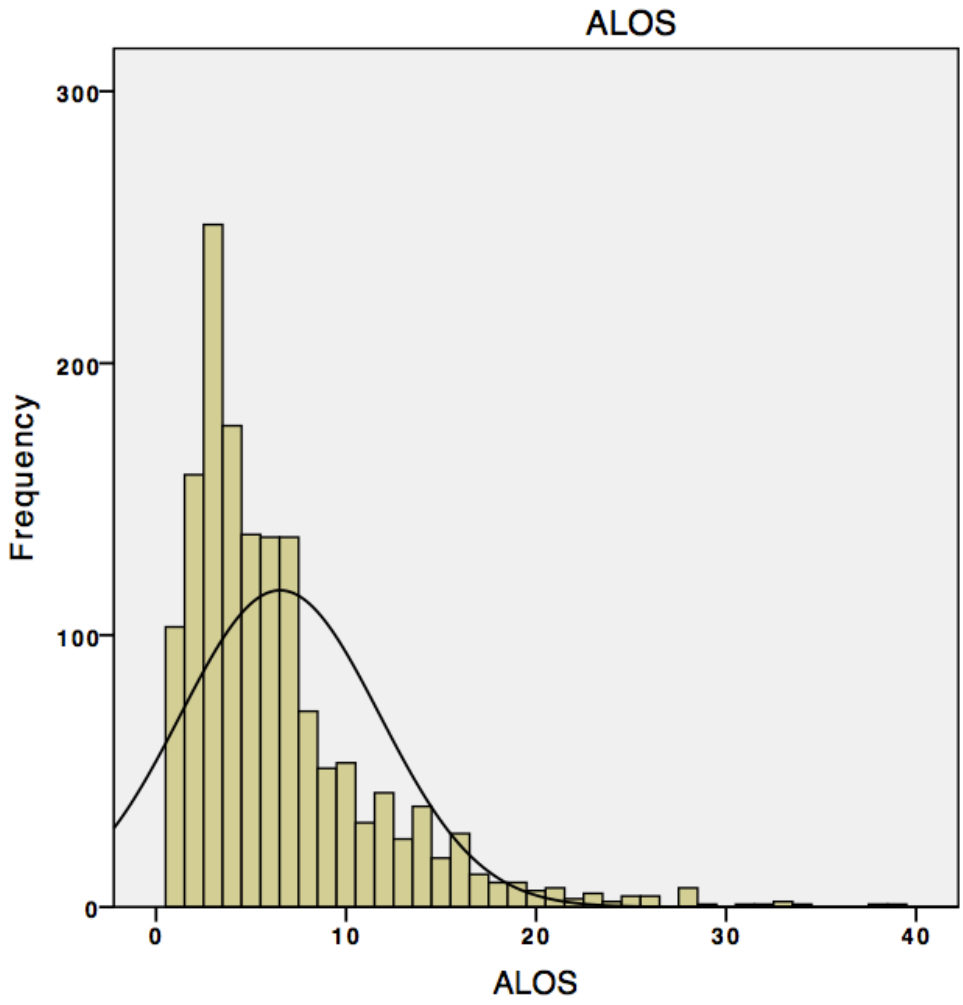

Figure 6. Average Length of Stay (ALOS) for inpatient hospitalizations at DHR with a positive skew for patients depending on diagnosis. The horizontal axis measures ALOS in days.

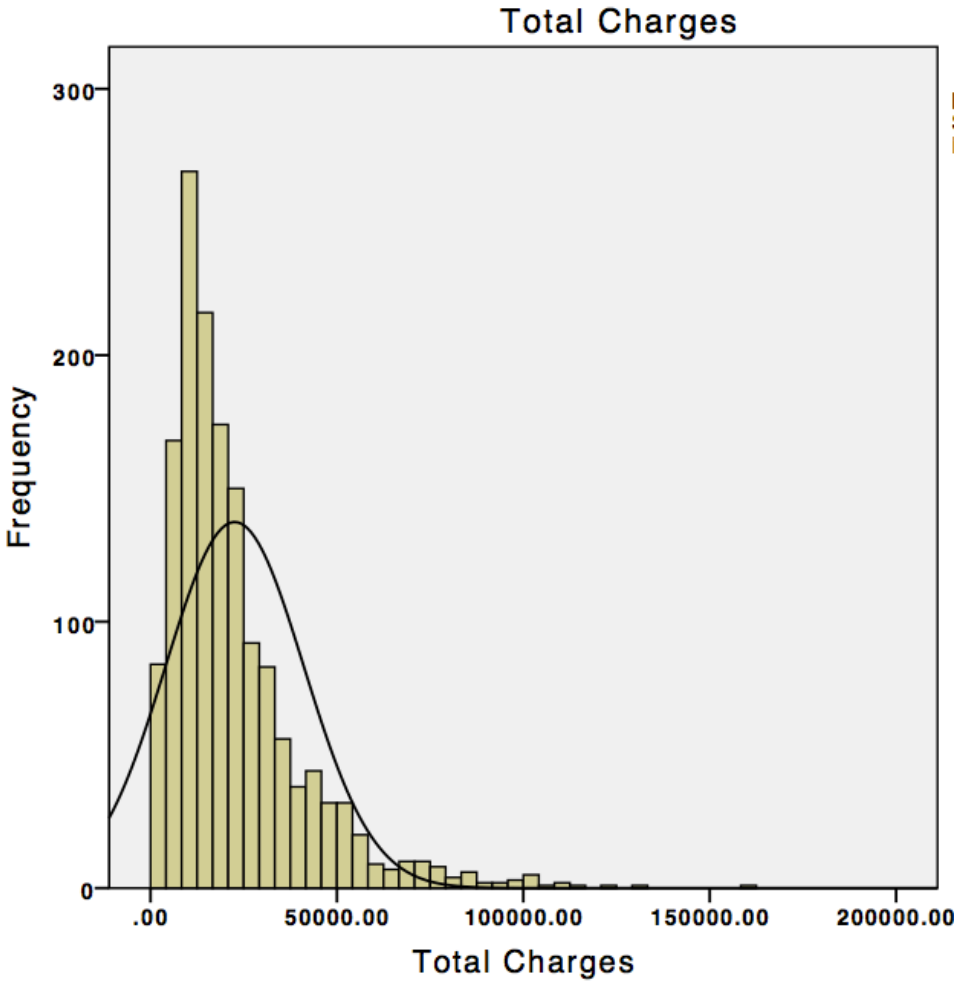

Figure 7. Total Charges per inpatient hospitalizations at DHR with a positive skew for patients depending on diagnosis. Total charges equals to total dollars.

Mean and Median data for the distributions are depicted in Table 5 below.

Table 5

Mean and Median Average Length of Stay and Charges per Stay at DHR for year 2011.

	Average Length of Stay	Total Charges Per Stay
Mean	6.53 Days	$22,559.03
Median	5 Days	$17,464.65

A Bonferroni adjustment was made for the two Kruskal-Wallis omnibus tests, setting the level at .025. See Table 6 for Kruskal-Wallis results of significant difference with a small effect size. Based on data from DHR, the average cost and length of stay (ALOS) in an inpatient setting were significantly influenced based on the patient's diagnosis.

Table 6

Kruskal-Wallis Omnibus Tests with Diagnostic Category as the Independent Variable

Dependent Variable	*df*	*H*	*p*	η^2
Total Charges	2	57.444	.000 *	.04
Average Length of Stay	2	45.712	.000 *	.03

Note. Bonferroni adjustment made for multiple comparisons.
* Significant at the .025 level.

Mann-Whitney U tests were utilized for the post-hoc analyses; refer to Table 7. Schizophrenia spectrum disorders required 1.53 more days of treatment within the hospital than Bipolar disorders and 2.43 more days than Depressive disorders. Moreover, Bipolar disorders required an additional .90 days of inpatient care when compared to unipolar Depressive disorders. All Mann-Whitney U tests produced a small effect size.

Table 7

Mann-Whitney U Post-Hoc Tests for ALOS.

Diagnostic Category (1)	Diagnostic Category (2)	*U*	*p*	*r*
Schizophrenia	Bipolar Disorder	53740.00	.001 *	.12
	Depressive Disorder	73381.00	.000 *	.20
Bipolar Disorder	Depressive Disorder	167163.00	.000 *	.11

Note. * Significant at the .05 level

Based on data from DHR, the total cost of care was significantly influenced based on the patient's diagnosis (as shown in Table 4). Mann-Whitney U tests were conducted for the post-hoc analyses (see Table 8). Schizophrenia spectrum disorders (M = $28,993.79, SD = $22,358.47) cost an additional $5,554.80 when compared to Bipolar disorders (M = $23,438.98, SD = $17,818.34) and $9,095.16 when compared to Depressive disorders (M = $19,898.62, SD = $16,978.65), both for a small effect size. Moreover, Bipolar disorders cost an additional $3,540.56 to treat when compared to unipolar Depressive disorders.

Table 8

Mann-Whitney U Post-Hoc Tests for Total Charges

Diagnostic Category (1)	Diagnostic Category (2)	*U*	*p*	*r*
Schizophrenia	Bipolar Disorder	53158.5	.001 *	.13
	Depressive Disorder	70176.50	.000 *	.22
Bipolar Disorder	Depressive Disorder	163174.00	.000 *	.13

Note. * Significant at the .05 level

Data Analysis for Research Hypothesis 2: Mental Health Expenditures

The second research hypothesis was: *Expenditures for mental health services for adults in McAllen, TX, are lower than they are nationally*. National, state, and local Medicaid data were obtained through Open Records Requests.

Ten-years' worth of archived Medicaid data were obtained for this analysis. Because there was a concern over the issue of scale, as the national cost was significantly larger than the state cost, the percent change from year-to-year was analyzed rather than total amounts. This was a more appropriate way to analyze the data, and a way to ensure a more accurate comparison was made.

Over the 10-year period, Massachusetts showed considerable variability in its numbers; however, one can note that most recently Massachusetts countered the national trend. This was significant to note since Massachusetts' health care reform was amended in 2010, around the same time that Massachusetts' numbers began improving. As evidenced in Figures 4 and 5, Massachusetts saw a 26% increase in Medicaid expenditures since 2002 for inpatient care compared to a 260% increase nationally. Similarly, Massachusetts saw an 8% increase in Medicaid expenditures for outpatient care compared to a 239% increase nationally. Although it may appear the Massachusetts' health care reform is working effectively since the data showed a

decrease of costs overall and saved money since 2010, it is important to note that the reform could only be one of the factors that contributed to the data showing an improvement of costs overall. For example, other programs such as the Child Behavioral Health Initiative also came into play around the same time and exclusively targeted the Medicaid population up to age 21; therefore, there is an overlap for individuals ages 18 to 21 for which this researcher may not have obtained data directly from Medicaid (see Tables 9 and 10 for the non-scaled data; These tables display the raw numbers—as opposed to percentages—to compare between Texas, Massachusetts, and the country as a whole). Massachusetts saw a 26% increase in Medicaid expenditures since 2002 for inpatient care compared to a 260% increase nationally. Similarly, Massachusetts saw an 8% increase in Medicaid expenditures for outpatient care compared to a 239% increase nationally.

Table 9

State and national Medicaid expenditures for inpatient mental health care from 2002 to 2011.

	National	Massachusetts	Texas
2002	$5,906,514.00	$154,132.00	$0
2003	$9,927,071.00	$196,686.00	$0
2004	$7,658,909.00	$205,819.00	$0
2005	$8,220,862.00	$136,556.00	$0
2006	$8,883,410.00	$507,985.00	$0
2007	$11,365,403.00	$568,568.00	$0
2008	$10,274,037.00	$270,965.00	$0
2009	$13,624,346.00	$232,768.00	$0
2010	$15,406,229.00	$1,013,211.00	$0
2011	$21,277,251.00	$194,173.00	$0

Note. The information in this table represents the data from which the percentages were derived in Figure 8.

Table 10

State and national Medicaid expenditures for outpatient mental health care from 2002 to 2011.

	National	Massachusetts	Texas
2002	$18,225,769.00	$3,780.00	$0
2003	$17,962,801.00	$3,689.00	$0
2004	$27,494,594.00	$6,950.00	$0
2005	$27,568,408.00	$1,938.00	$0
2006	$24,916,941.00	$14,407.00	$0
2007	$39,422,126.00	$23,429.00	$0
2008	$63,284,344.00	$19,223.00	$0
2009	$57,573,017.00	$13,385.00	$0
2010	$64,764,124.00	$344,939.00	$0
2011	$61,737,312.00	$4,086.00	$0

Note. The information in this table represents the data from which the percentages were derived in Figure 9.

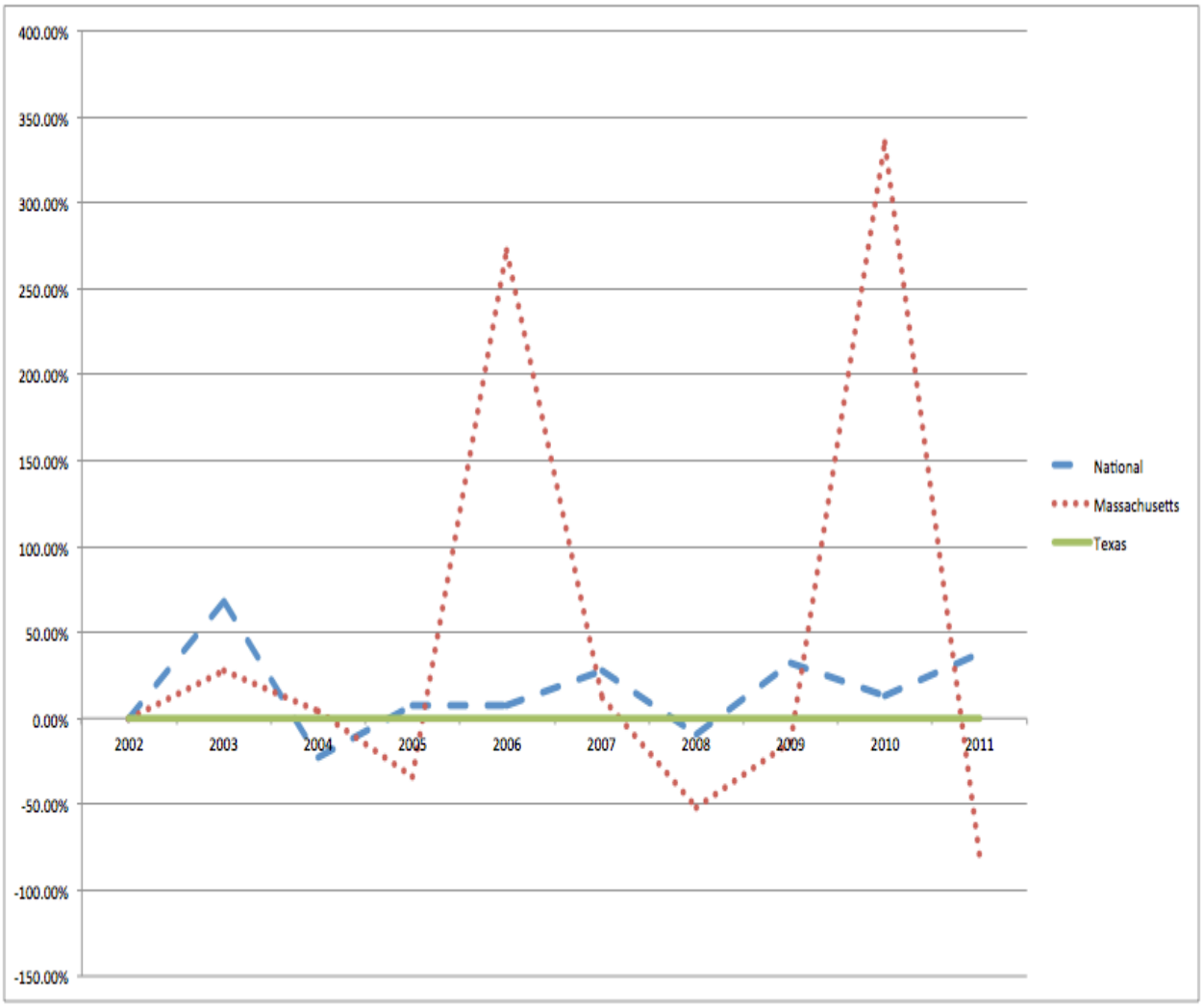

Figure 8. A comparison of the percent change year-to-year in Medicaid expenditures at the national as well as state (i.e., Massachusetts and Texas) levels. Massachusetts saw a 26% increase in Medicaid expenditures since 2002 for inpatient care compared to a 260% increase nationally.

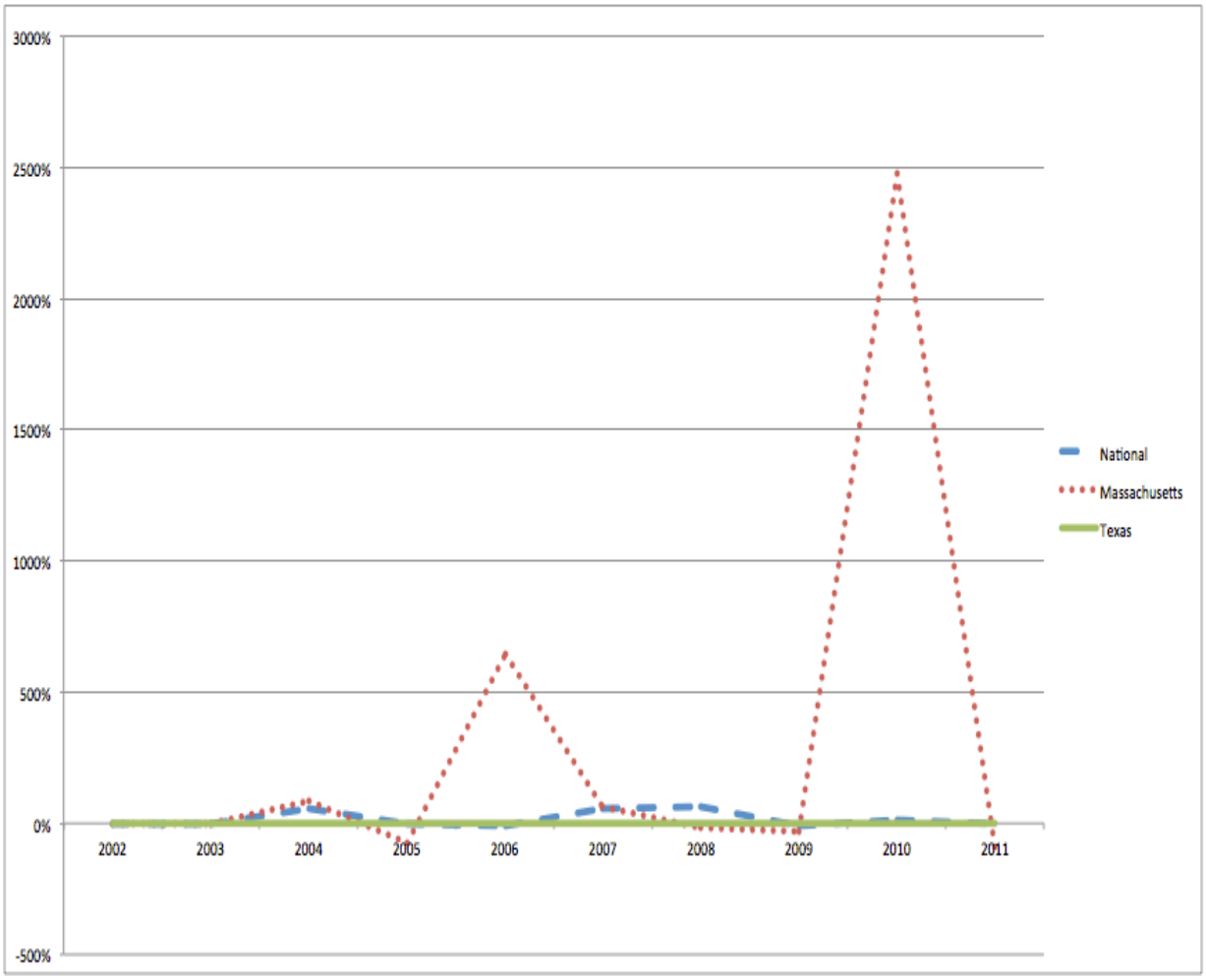

Figure 9. Medicaid expenditures for outpatient mental health care from year-to-year at the state level comparing Massachusetts and Texas. Massachusetts saw an 8% increase in Medicaid expenditures for outpatient care compared to a 239% increase nationally.

Readmission Data for Consideration of Both Hypotheses 1 and 2

It is helpful to look at readmission rates for several reasons. Readmission rates may explain higher expenditure rates. High readmission rates may also indicate that patients are not receiving appropriate follow-up care in the community after acute hospitalizations. For year 2011 over ¼ of the patients admitted to the inpatient psychiatric unit at DHR were readmitted at least once. The cumulative percentage for 2 or more admissions was 26.72%. Figure 10 displays the cumulative percentage of admissions. For instance, approximately 27% of patients were admitted two or more times. Similarly, approximately 7% were admitted 4 or more times. Figure 11 displays the percentage of patients who were admitted a set number of times. For instance, approximately 15% were admitted exactly two times while approximately 3% were admitted four times.

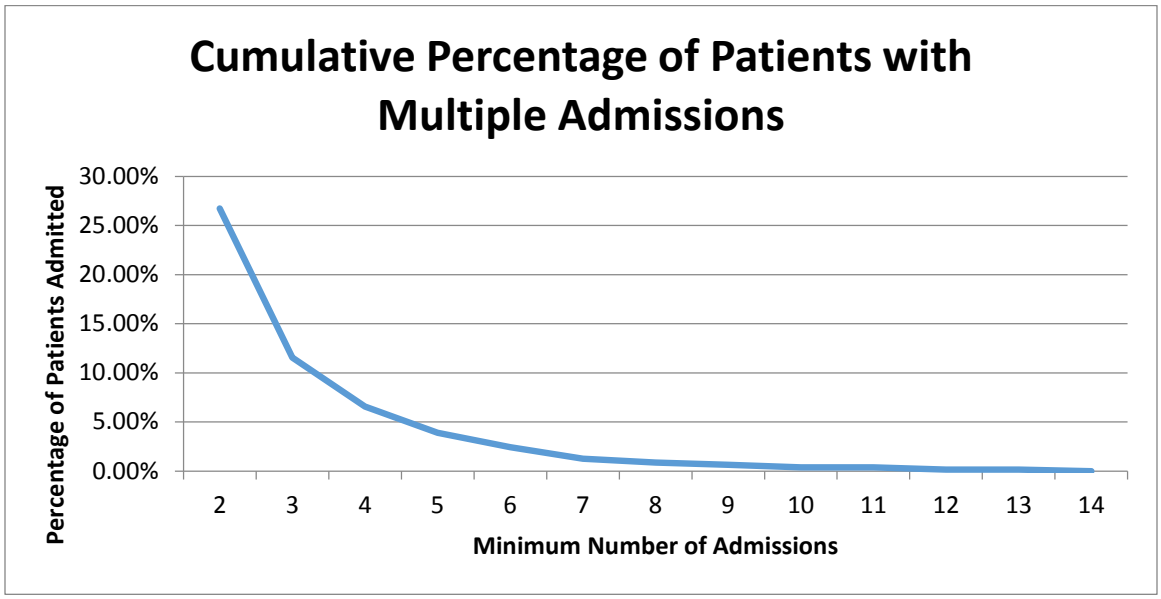

Figure 10. Cumulative percentage of patients readmitted to DHR based on the number of admissions.

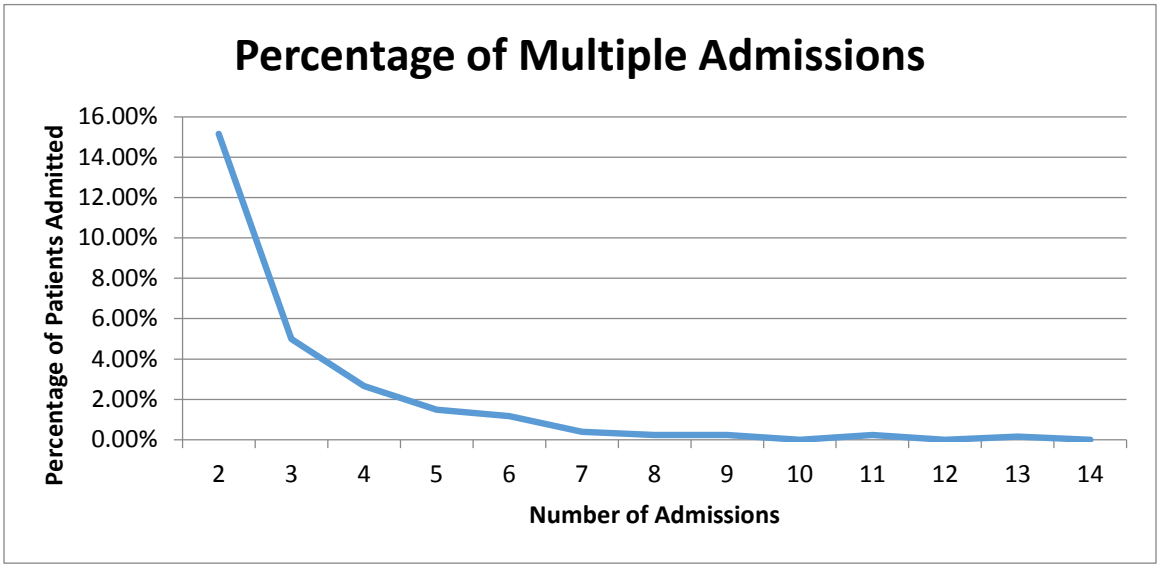

Figure 11. Percentage of patients readmitted to DHR based on the number of admissions.

Table 11 conveys readmission data in both absolute and percentage data; the data is based on Diagnostic Related Group. The more severe diagnosis, for example, Bipolar disorders and Schizophrenia spectrum disorders, showed to have the highest rates of readmissions.

Table 11

Readmission data by diagnosis

	Total Patients	Patients Readmitted	Readmission Rate
Adjustment Disorders	12	0	0%
Bipolar Disorders	287	87	30%
Depressive Disorders	600	100	17%
Developmental Disorders	5	1	20%
Impulse Control Disorders	33	6	18%
Neurological Disorders	133	33	25%
Other Mood	16	0	0%
Other Psychosis	53	3	6%
Schizophrenia Spectrum	159	44	28%
Substance Abuse	32	2	6%

Note. Impulse Control Disorders included those with Impulse Control Disorder NOS, Explosive Personality Disorder, and Intermittent Explosive Disorder.

Data Reporting for Research Question: Continuum of Care for Mental Health

The study asked one research question: *To what extent does McAllen offer a continuum of care for mental health?* In order to assess this, data on services offered at a local community mental health center (TTBH) and at a local hospital (DHR) were compiled and then compared to services offered in Massachusetts at a community mental health center (Brookline Community Mental Health Center) and a hospital (McLean Hospital) that, in my opinion, hold a high standard of care for the treatment of mental health in the United States.

As seen in Table 12, the continuum of care for community mental health services in the McAllen area is not as diverse in the types of therapy or services available as in Massachusetts. For example, Brookline CMHC offers individual, group, family, and couple's therapy, while TTBH only offers individual and group. Another difference is that TTBH does not offer any type of psychological/neuropsychological assessment nor does it have residential programs, while Brookline does. Other discrepancies among availability of services are in the community programs, which probably vary by region to meet the needs of each community. Having said this, it is noted that both community mental health centers offer quite a number of different community-based programs.

Table 13 shows the gaps in McAllen's continuum of care at the psychiatric hospital level. DHR does not offer any type of step-down care. Any and all services offered by the DHR psychiatric facility are acute and inpatient. McLean Hospital has a noticeably more holistic approach to psychiatric hospitalizations and their aftermath. Tables 12 and 13 below provide continuum of care findings.

Table 12

Community Mental Health Center Continuum of Care.

	Brookline Community Mental Health Center	Tropical Texas Behavioral Health
Individual Counseling/Psychotherapy	✓	✓
Group Psychotherapy	✓	✓
Family Therapy	✓	
Couples' Therapy	✓	
Psychopharmacology/Psychiatry	✓	✓
Diagnostic Evaluation	✓	✓
Psychological Testing	✓	
Neuropsychological Testing	✓	
Crisis Intervention	✓	✓
Home-based Counseling for Individuals and Families	✓	✓
Homeless Families Outreach Programs/Homelessness Prevention	✓	
Community Assistance Network	✓	
Residential Programs	✓	
Homesafe Program	✓	
Emergency Food and Rental Assistance	✓	
Multicultural Initiatives	✓	
Community Education Programs	✓	
High Performance Program/Skills-Training	✓	✓

	Brookline Community Mental Health Center	Tropical Texas Behavioral Health
Services		
Metropolitan Mediation Services	✓	
Substance Abuse Prevention	✓	
Women's Workshop	✓	
Assertive Community Treatment		✓
Case Management		✓
Crisis Hotline		✓
Respite Services		✓
Family Support Program		✓
Supported Employment & Placement Services		✓
Co-occurring Mental Health and Substance Abuse Treatment		✓
Federal Pretrial and Probation Treatment Programs		✓ ✓
Bureau of Prisons Program		✓

Table 13

Psychiatric Hospital Continuum of Care.

	McLean Hospital	Renaissance Behavioral Center at DHR
Crisis Intervention	✓	✓
Clinical Assessment and Evaluation	✓	✓
Short-term Acute Inpatient Care	✓	✓
Partial Hospitalization Program	✓	
Residential Treatment	✓	
24-hour Therapeutic Environment	✓	✓
Nursing	✓	✓
Inpatient Individual Psychotherapy	✓	✓
Inpatient Group Therapy	✓	✓
Psychiatric Consultation to Inpatient Medical Service In-house	✓	✓
24-hour Emergency Coverage for the Emergency Room and for Medical Beds In-house	✓	✓
Access to Other Specialists and EEG and EKG services, as needed	✓	✓
Intensive Outpatient	✓	
Outpatient Counseling/Therapy	✓	
Outpatient Psychiatric/Psychopharmacological Services	✓	
Outpatient Group Psychotherapy	✓	
Activity Therapy/Occupational Therapy	✓	✓

	McLean Hospital	Renaissance Behavioral Center at DHR
Case Management	✓	✓
Transcranial Magnetic Stimulation (TMS) Therapy	✓	✓
Electroconvulsive Therapy (ECT)	✓	
Memory Diagnostic Clinic	✓	

Note. Doctors Hospital at Renaissance opened an Intensive Outpatient Program (IOP) January 2014.

Summary

Non-parametric statistics yielded that Diagnostic Related Groups significantly impacted the Average Length of Stay, as well as expenditures, for psychiatric inpatient treatment in the McAllen, TX area. State and national trends were analyzed for Medicaid expenditures. Although Massachusetts evidenced considerable variability in Medicaid expenditures for mental health, the trend in mental health expenditures was inverse to the national trend. This occurred since the 2010 addendum to Massachusetts health care reform. Conversely, Texas consistently failed to contribute any moneys to Medicaid. What is notable is that Massachusetts saw a considerably smaller increase in Medicaid expenditures over a 10-year period for both inpatient and outpatient when compared to the United States as a whole (i.e., 26% vs. 260% for inpatient and 8% vs. 239% for outpatient, respectively). The results from the descriptive statistic data analysis indicate that more inpatient and outpatient mental health services are available across-the-board in the Boston, Massachusetts area versus the McAllen, Texas area.

Chapter 5: Discussion

The study sought to compare Atul Gawande's findings on general health care in the McAllen, Texas area, reported in his 2009 *New Yorker* article, with the present researcher's findings on mental health care in the same geographic region. Dr. Gawande asserted from the findings of his study that "McAllen, Texas is the most expensive town in the most expensive country for health care in the world" (2009, para. 4). The present researcher asked the question whether Gawande's statement held true when it came to mental health utilization and expenditures in McAllen.

Implications of Research

Chapter 1 posed questions on mental health expenditures in McAllen, TX and how they compare to the rest of the country, as well as inquired about what services were accessible for mental health treatment and whether those services were current, and state-of-the-art, along a continuum of care for mental health. The data analysis on Medicaid expenditures evidenced that the McAllen area actually spent much less than the national trends because (a) the state of Texas allocated no money to Medicaid for mental health services, and (b) McAllen area residents do not have access to as many different mental health services (i.e., gap in the continuum of care) as do others services in Boston, Massachusetts and in other parts of the country, as reported by Medicaid Hence, there are less services for expenditures to be generated from.

Examining factors such as average length of stay (ALOS) for the DHR psychiatric hospitalizations in McAllen, TX, was relevant when trying to determine whether utilization assertions of "across-the-board overuse of medicine" (2009, para. 31) made by Dr. Gawande were accurate. The McAllen data indicated that ALOS varied significantly depending on Diagnostic Related Group (DRG); for example patients with more severe and persistent mental

illness (SPMI) diagnoses such as, Bipolar Disorder or Schizophrenia, had longer lengths of stay than those with Major Depression. But even then, the ALOS for the DHR psychiatric hospitalizations was 6.53, which were still lower than the national AOLS of 7.2 days (Center for Disease Control and Prevention, 2010). Readmission rates at DHR were 26.72% with nearly one fourth of patients having at least one readmission for year 2011. McAllen's numbers for readmissions were higher than compared to the national average of nearly 20% (Jencks, 2009).

Data gathered on access to different services along a continuum of care for both McAllen, TX and Boston, MA, indicated that although McAllen does offer innovative interventions (i.e., transcranial magnetic stimulation (TMS) therapy) and empirically supported treatments (i.e., practicing from a Cognitive Behavioral paradigm), McAllen lacked many important treatments and interventions available in other parts of the country (i.e., partial hospitalizations, residential treatment, psychological/neuropsychological testing). Therefore, it appears that unlike Gawande's findings on general health, McAllen does not have accessibility to the standard level of care when it comes to mental health treatments and practices.

Limitations of the Study

Several major limitations existed for this study. The most significant was the inability to access all needed data in order to make comprehensive comparisons and to arrive at reliable conclusions. One set of data that could not be obtained was Medicare's statistics on mental health utilization and expenditures. While I communicated extensively with Centers for Medicare and Medicaid Services and petitioned for data on mental health through an Open Records Request, Medicare responded that they did not have isolated data on mental health for the year 2011 as of now. Although this information would have made for an apparently easier comparison to Gawande's findings (since his study was solely based on Medicare data), having

acquired Medicaid data for mental health for the present study was actually an accurate depiction of mental health care for two reasons: (a) Medicaid is the single largest payer of mental health services in the United States (SAMHSA, 2011), and (b) since McAllen is in Hidalgo county, one of the poorest counties in America, there is a very high number of Medicaid recipients in the area (U.S. Census Bureau, 2011). Another limitation came from only being granted limited data by TTBH. Due to the lack of raw data, though some convincing trends were detected, I could not perform inferential statistics to make hypotheses or accurate predictions that could be utilized to evaluate and improve services.

Besides the limitations due to a lack of certain necessary data (i.e., Medicare data), there seem to be systemic shortcomings at play. For example, when I asked TTBH for utilization and expenditure rates based on primary mental health diagnosis, they responded that these details were "not captured" in their data. Similarly, race and ethnicity data were requested from DHR's Behavioral center, but they did not make that data available either. Another example of a systemic weakness is that the state of Texas has either not been contributing any money ($0 each year for mental health) to Medicaid, or perhaps the State of Texas is not reporting to Medicaid as they are supposed to.

Future Directions

Several factors that can be considered in terms of future directions include (a) medical cost offsets, (b) the continuum of care gap, and (c) cultural competency.

Medical cost offsets. Medical cost offsets refers to a decrease in cost of general medical care when individuals have the opportunity to receive mental health care. Meaning that, savings generated in medical care offset the costs of mental health care (Anderson & Estee, 2002). The notion of medical cost offsets would be particularly interesting to research in the South Texas

area, given Gawande's (2009) findings of high medical expenditures and this researcher's findings on mental health utilization and expenditure rates. A study could be done to see if there is a connection between medical and mental expenditures in the McAllen area. For example, is it possible that low mental health expenditures leads to higher health care expenditure? Perhaps a study such as this would even support Gawande's findings.

Continuum of care gap. A future study could investigate McAllen's continuum of care more exhaustively and might be able to correlate high psychiatric hospitalization readmission rates with poor aftercare/continuation of care for outpatient mental health in the McAllen area. It would be important to examine how hospitals work with community mental health centers or outpatient settings, and how those relationships, or lack thereof, relate to patients relapsing to inpatient care.

Cultural competency. In an ethnically cultural enclave such as McAllen, TX, it is important to pay particular attention to the possibility of disparities between need and mental health services (Alegria et al., 2002; Bao & Sturm, 2004; Vega et al., 1999). There should be better ways of addressing whether multicultural competence is in effect in a region's overall health care system. An area like McAllen with a Mexican American population of (84.6%) needs culturally and linguistically competent practitioners to perform effective mental health interventions (Griner & Smith, 2006). In the present researcher's professional experience, McAllen is a place that has a greater demand for mental health services than there is supply. It would be socially just to find ways to equitably distribute the supply of therapists across poor regions, such as South Texas. Perhaps services, such as telemedicine, could provide a modality for more outpatient or step-down care for this particular patient population, and in the long run might even bring mental health expenditures down.

Conclusion

Upon examination of available data, the researcher would venture to conclude that Dr. Atul Gawande's claims about McAllen, Texas' expenditures and overutilization of services does not translate to the mental health specialty. The findings of the study indicate that the McAllen Texas area is probably struggling with larger systemic and ideological issues that may be affecting funding, and, therefore, availability and access to mental health services. There is a serious gap in the continuum of care in mental health services in McAllen Texas, which in turn may be causing heightened readmission rates, and raising expenditures in that sense.

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Appendix A

Email Communications with Dr. Atul Gawande

ANTIOCH UNIVERSITY

Josefina Irigoyen <jirigoyen@antioch.edu>

Re: respectfully requesting your guidance

5 messages

Gawande, Atul,M.D. <AGAWANDE@partners.org> Wed, Oct 10, 2012 at 4:41 AM

To: "jirigoyen@antioch.edu" <jirigoyen@antioch.edu>

The data I used was from The Dartmouth Atlas (available online) and working with the data team there. There is also the commercial insurer Medstat database. Good luck.
AG
Atul Gawande, MD, MPH
General and Endocrine Surgeon, Brigham & Women's Hospital
Professor, Harvard School of Public Health
Professor, Harvard Medical School
Director, Ariadne Labs
Founder and Chairman, Lifebox
Staff Writer, The New Yorker
www.ariadnelabs.org
www.lifebox.org
www.twitter.com/atul_gawande

From: Josefina Irigoyen [mailto:jirigoyen@antioch.edu]
Sent: Wednesday, October 10, 2012 01:36 AM
To: Gawande, Atul <agawande@hsph.harvard.edu>
Subject: respectfully requesting your guidance
Dear Dr. Gawande,

Hello. My name is Josefina Irigoyen, and I am a student at Antioch University's clinical psychology doctoral program. I am writing to you because I am currently working on my dissertation which is heavily influenced by your article *The Cost Conundrum*.

I grew up in South Texas and plan to practice clinical psychology there once I graduate. So as you may imagine, your article on the cost and utilization of healthcare peaked my interest for several reasons.

I would like to, in some ways, examine your findings in a different light. I am particularly interested in the accessibility and utilization of mental health (psychological and psychiatric) services in the McAllen area and will look at practitioner's (psychologists, psychiatrists, counselors, hospital staff and administrators, etc.) perceptions of patient services and accessibility in the area. (what's available, what's not, what's working, what isn't, what would they suggest could be improved, etc....with the relevance that practitioners, as gatekeepers, can dramatically impact patient's awareness and engagement in treatment).

I can only imagine how extraordinarily busy you must be, but I would like to ask if you could possibly offer me a little guidance?

Could you share with me what measurement tool(s) you used in your investigation of McAllen's healthcare? How about what indices? I know you referred to data from Medicare and an analysis by Dartmouth, but if possible, could you direct me as to how to get a hold of that data or those measurements specifically?

You see, I would like to adopt the same measures you used as well as similar constructs for my study.

I would very much appreciate any help, guidance, or direction you could offer me Dr. Gawande.

Sincerely,

Josefina Irigoyen

The information in this e-mail is intended only for the person to whom it is addressed. If you believe this e-mail was sent to you in error and the e-mail contains patient information, please contact the Partners Compliance HelpLine at http://www.partners.org/complianceline . If the e-mail was sent to you in error but does not contain patient information, please contact the sender and properly dispose of the e-mail.

Josefina Irigoyen <jirigoyen@antioch.edu> Wed, Oct 31, 2012 at 3:13 PM

To: "Gawande, Atul,M.D." <AGAWANDE@partners.org>

Dear Dr. Gawande,

I was very excited and appreciative to receive your quick response to my last email. I have looked into The Dartmouth Atlas, which I found very impressive. Unfortunately, it does not appear to report on mental health (utilization, expenditures, etc.) as a subspecialty.

Would it be possible for you to provide me with any other suggestions as to where I could find and collect these types of statistics on mental health (any other public databases, reports, etc.)?
Also, I was wondering if you could please guide me with something else I am struggling with.
I am having a difficult time choosing an appropriate framework for my dissertation. I have read extensively about Andersen's Behavioral Model of Health Services Use, but I don't know that it's entirely fitting to what I'm trying to portray. Could you perhaps suggest a theoretical framework that you would consider more fitting or appropriate? If you were to write about your experience and investigation in McAllen (perhaps you already have, but I'm just not aware of it), as a research study, what framework might you have used?

Again, I'd really appreciate all and any of your help, and thanks for your time. To have even had the opportunity to correspond with you via email has been a privilege for me, so thanks again.

Sincerely,

Josefina Irigoyen [Quoted text hidden]

Josefina Irigoyen <jirigoyen@antioch.edu> Thu, Nov 8, 2012 at 5:56 PM

To: "Gawande, Atul,M.D." <AGAWANDE@partners.org>

Hello again Dr. Gawande,

I'm just following up on my last email. I don't know if you've had a chance to read it, much less respond.

I believe I have located the appropriate contacts to help me with attaining the Medicare data I am looking for, for my study.

I would still really appreciate any advice or thoughts you could give me on a framework.

Thanks again,

Josefina [Quoted text hidden]

Gawande, Atul,M.D. <AGAWANDE@partners.org> Sat, Nov 10, 2012 at 4:46 PM

To: Josefina Irigoyen <jirigoyen@antioch.edu>

I think your best bet might be talking to people in mental health services research. This is getting well beyond my expertise!

Yours,
AG
Atul Gawande, MD, MPH
General and Endocrine Surgeon, Brigham & Women's Hospital
Professor, Harvard School of Public Health
Professor, Harvard Medical School
Director, Ariadne Labs
Founder and Chairman, Lifebox
Staff Writer, The New Yorker
www.ariadnelabs.org
www.lifebox.org
www.twitter.com/atul_gawande

[Quoted text hidden]

Appendix B: Letter of Institutional Collaboration

5501 S McColl Road
Edinburg, Texas 78539
http://www.dhr-rgv.com/

February 13, 2013

Antioch University New England
Department of Clinical Psychology
40 Avon Street
Keene, NH 03431-3516

To: Department of Clinical Psychology

Doctors Hospital at Renaissance has agreed to help student Josefina Irigoyen by providing her hospital data from our Behavioral Center to be used for her dissertation research.

I would be happy to discuss any further questions you may have. You can contact me at (956) 358-3002 or email to j.gill@dhr-rgv.com.

Sincerely,

Jonathan Gill, MBA, M.A., M.Div.

Administrative Director, Doctors Hospital at Renaissance
5501 S McColl Road
Edinburg, Texas 78539