A STUDY OF DEPRESSION CARE PERCEPTIONS IN

TEXAS PRIMARY CARE NURSE PRACTITIONERS

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DEDICATION

To my husband, Jonathan, and my children, Joel and Andrew, thank you for your

patience, love and continual support in this endeavor.

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ABSTRACT

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Depression often coexists with chronic illness and presents uniquely in each primary care patient. As Nurse Practitioners (NPs) note the complex nature of the treatment of depression in primary care as well as the prominence, they are also faced with balancing the fine line of mental and physical health of their patient populations. The purpose of this study was to identify and evaluate NPs' perceptions and identification of barriers to depression care in primary care settings in Texas.

A mixed methods approach was used in this descriptive study using a convenience sample of 6,356 family and adult Nurse Practitioners (NPs) in Texas (N=121). Participants completed the Demographics and Practice Data questions and the *Primary Care Provider Questionnaire* (Upshur & Weinreb, 2008). A series of regressions were used to assess the effect of demographics, perceived barriers, and professional characteristics on attitude scores of the *Primary Care Provider Questionnaire* While there were no significant predictors of attitude scores, a significant multiple linear regression was found predicting skills scores from perceived barriers, and

professional characteristics. Examination of the individual predictors revealed that participants who agreed that patient resistance and compliance issues were a barrier to education had increased self-ratings of skills in recognizing and treating depression ($p <$ .05). A significant model was also seen in that participants who see more patients on a daily basis are more likely to have lower Satisfaction, Compensation and Adequacy of time scores. Significant predictors of higher behavior scores included indicating that time restrictions are not a treatment barrier ($p = .020$) and having participated in continuing education ($p < .003$). Time was noted as an educational barrier by a majority but not selected as often as a treatment barrier. Qualitative responses included themes of challenges and importance of assessment and treatment of depression in patients.

While current studies of depression treatment in primary care have focused on physician and other health professionals' attitudes towards depressed clients, very little research has been completed with NPs and their attitudes and perceptions of treatment of depression. This study helps to identify barriers and treatment concerns of depression care in urban and rural Texas. In this environment of managing complex populations of patients, a teamwork approach using ancillary staff such as health educators, nurses, and other care managers will be necessary for NPs to provide the complex physical and mental health care expected in today's healthcare environment.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Mental illness and related disorders in the United States affect 26.2% of

Americans age 18 and over, which translates to one in four adults suffering from a mental

disorder (National Institute of Mental Health [NIMH], 2010). Depression is one of the

most common mental disorders in the U.S. with 9 million cases reported, and twice as

many women are affected as men (Centers for Disease Control & Prevention [CDC],

2011; National Alliance on Mental Illness [NAMI], 2010). A high degree of co-

morbidity exists in persons with depression, implying increased likelihood of also having

other chronic diseases (Palinkas, Ell, Hansen, Cabassa & Wells, 2010; Sussman et al.,

2011). Untreated depression can lead to substance abuse, suicide, and worsening of

conditions such as obesity, diabetes and heart disease (Belnap et al., 2006; Burman,

McCabe & Pepper, 2005; CDC, 2011; Moussavi et al., 2007; NIMH, 2010). Social

relationships as well as job opportunities and performance are also affected by untreated

depression.

Disparity in mental health treatment is one of the issues addressed in Healthy

People 2020, resulting largely due to lack of access to care because of cost and lack of

availability of mental health care providers. One of the specific mental health objectives

described in HP 2020 is improvement of treatment by offering on-site mental health

treatment in conjunction with primary care (Agency for Healthcare Research Quality

[AHRQ], 2011).

The World Health Organization (2011) has estimated that 10-15% of patients who see a primary care provider are living with depression, and 97% of those with depression go without treatment. With a population of 24.3 million in the state of Texas, it is estimated that 288,000 children and 833,000 adults have a serious mental illness (NAMI, 2010). In the U.S. overall in 2008, only 13.4 percent of US adults received any type of treatment for a mental disorder (NIMH, 2011). Despite ongoing conversations in American society regarding the prevalence of depression, it is still under-treated and under-diagnosed in primary care (Sobczak, 2009; Weber & Snow, 2006). Depression is considered to be a highly treatable disorder that can have favorable outcomes when diagnosed and treated properly (NIMH, 2011).

Purpose of the Study

The screening and assessment of depressed patients is not adequately performed within the primary care environment, given the complexity of patients with chronic co-morbid conditions (Palinkas et al., 2010; Sussman et al., 2011). Few studies have examined advanced practice nurse practitioner's (NP) attitudes of depression care and their views of potential obstacles or barriers to treatment (Burman et al., 2005; Creamer, 2011; Hing et al., 2011). The purpose of this study is to identify and evaluate NPs' perceptions and identification of barriers to depression care in primary care settings in Texas. Currently, there are no requirements for mental health continuing education in the process of license renewal as there are for pharmacology hours.

Theoretical Foundation

Theoretical constructs that focus on behavior and attitudes of people and behavior have long been examined by social scientists. The Attribution Theory (Heider, 1958) seeks to explain how a person interprets meaning from another's behavior. Interaction with a patient often involves the provider's perception of why the patient is under duress, anxious or depressed. Seeking to find this underlying meaning helps dictate how the patient is asked to explain their thoughts on their depression or anxiety. The Attribution Theory examines people's perceptions, how they perceive themselves, and behaviors of other people including health-related behaviors (Brooks & Clark, 2011; Cranford & King, 2011; Heider, 1958; Stuart & Blanton, 2003). In application to this depression study, internal and external attributions affect the way a provider interprets healthcare scenarios based on internal (attitudes or beliefs) or external (clinical situation or pressures) attributions.

Hypotheses

The hypotheses for this study are as follows:

Ho1: Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of attitude scores on the *Primary Care Provider Questionnaire*.

Ho2: Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the self-rating of skills in recognizing and treating depression on the *Primary Care Provider Questionnaire.*

Ho3:   Demographics, perceived barriers, and professional characteristics will be

neither predictive nor protective of scores on the rating of the specific

behaviors they implement in their depression treatment (treatment and/or

referral) as measured by the *Primary Care Provider Questionnaire.*

Ho4:   Demographics, perceived barriers, and professional characteristics will be

neither predictive nor protective of scores on the ratings of satisfaction,

compensation, and adequacy of time to treat depression.

Research Questions

1.   Are there any perceived differences in perceptions of treatment for depression

based on rural versus urban Nurse Practitioners?

2. What barriers do Nurse Practitioners report in their treatment of depression in

primary care?

3. What barriers do Nurse Practitioners report as present in the education of those

with depression?

Delimitations

The study will have the following delimitations:

1. The sample will consist of Texas Nurse Practitioners who are currently

licensed to practice in primary care family or internal medicine practices.

2. Only Texas Nurse Practitioners who voluntarily complete the entire

questionnaire will be used as participants in the study.

Limitations

The study will have the following limitations:

1. The pool of NPs for this study is obtained by a non-random convenience
   sampling within Texas that includes advanced practice nurses; therefore
   external validity will be limited and study results cannot be generalized.

2. The research questionnaire is intended to gather qualitative and quantitative
   information. The tools may not reflect the same outcomes in this particular
   sample as in previous populations under study.

3. The data will be analyzed using self-reported instruments from an Internet
   study. Thus, the sample will be limited to NPs who have computer access to
   the internet survey.

Assumptions

The study will have the following assumptions:

1. The participants will be accurate and honest in answering the questionnaire.

2. Participants will have access to an internet-connected computer and have
   computer skills to complete an online survey.

Definition of Terms

Depression is the overwhelming feeling of sadness and lack of energy to face
daily life that interferes with the ability to concentrate, work, or accomplish tasks (NIMH,
2011).

Nurse practitioner is an advanced practice RN with a Master's degree, DNP or
PhD in nursing specializing in an area of nursing and health care with a specific age

group of patients. NPs assess, diagnose, prescribe medication and develop the treatment plan (AANP, 2011).

Family practice refers to a medical provider office that cares for patients of all ages, gender, socioeconomic level, and illness level (AAFP, 2011; AANP, 2011).

Primary care refers to the first point of entrance into the health care system for a patient with an internal medicine, family, or pediatric physician, nurse practitioner or physician assistant (AAFP, 2011; AANP, 2011).

Significance of the Study

The current research examined Texas adult and family NPs perceptions of depression care. With the prevalence of depression in the U.S., and the presence of budget cuts in mental health arenas, support staff to the medical community such as health educators and nurses must be prepared to assess mental health problems, especially depression, as they arise. While suicide is not specifically examined in this study of depression care in Texas, it is a marker for poor outcomes of untreated depression in the U.S. Prevention of adverse events starts with assessment and referral of the depression client. Currently, there are shortages of community health programs that support depression care in Texas. This study helps to identify barriers and treatment concerns of depression care in urban and rural Texas.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this review is to explore literature on the treatment of depression in primary care, and to determine what factors are considered as barriers related to depression screening and treatment. This review will provide historical background on the prevalence of depression in primary care, and the NP's perception of barriers to care of depressed patients. Findings from these various studies will be presented in light of the need for consideration of mental health in primary care.

Depression

Depression Definition

A major depressive episode is defined by the Diagnostic and Statistical Manual [DSM-IV] (2000) diagnostic criteria as a period of two weeks or longer during which there is either depressed mood or loss of interest or pleasure, and at least four other symptoms that reflect a change in functioning including problems with sleeping, eating, energy, concentration and self-image (American Psychiatric Association, 2004; SAMHSA, 2008). The National Institute of Mental Health [NIMH] (2010) identifies a cluster of symptoms that can be manifested as a persistent sad, anxious or empty mood, feelings of hopelessness, guilt, worthlessness, or pessimism with the severity and duration depending upon individual characteristics. The United States Preventive Services Task Force [USPSTF] (2009) refers to depression as not a single disease process

but as a larger entity for major depressive disorder, dysthymia or a minor depression.

The DSM-IV (2000) is the official guidebook for diagnostic criteria.

Major Depressive Disorder requires two or more major depressive episodes.

Diagnostic criteria for Major Depressive Disorder (MDD) includes the following:

> A depressed mood and/or loss of interest or pleasure in life activities for at least 2 weeks and at least **five** of the following symptoms that cause clinically significant impairment in social, work, or other important areas of functioning almost every day. Depressed mood most of the day, nearly every day, loss of interest or pleasure in all or most activities, significant weight loss or gain (unintentional), insomnia or sleeping too much, slowed thinking or movement, fatigue or loss of energy nearly every day, feelings of worthlessness or excessive guilt, diminished ability to think or concentrate or indecisiveness, and recurring thoughts of death or suicide (APA, 2000, p.356)

> Dysthymic Disorder is a second type of depression identified by the DSM-IV as a depressed mood most of the day for more days than not, for at least 2 years, and the presence of **two** or more of the following symptoms that cause clinically significant impairment in social, work, or other important areas of functioning: poor appetite or overeating, insomnia or sleeping too much, lower energy or fatigue and low self-esteem, poor concentration or difficulty making decisions, feelings of hopelessness (APA, 2000, p. 380).

MDD may also have any one of the following: psychotic features, melancholic features, atypical features, catatonic features, postpartum onset, and seasonal features (Kozy & Varcarolis, 2010). There are four proposed subtypes of MDD that are being considered for the upcoming DSM-V (5th Edition). These include Minor Depression, recurrent brief depression, mixed anxiety-depression, and premenstrual dysphoric disorder. Regardless of its etiology, depression takes on a unique form in each individual. The public health concern of untreated depression is its potential to lead to

disability and suicide in some persons. Most depression when treated in a timely and appropriate manner with counseling and/or medications can result in improved quality of life and less harmful sequelae in an individual's life.

Frequency

Depression is a widespread public health concern and is considered to be one of the top 3 leading causes of disability. In 2020, it is predicted that it will be the leading cause of disability among higher income nations (WHO, 2012). Contributors to depression disability worldwide have been found to be chronic disease, unmet needs, and increased age of populations (WHO, 2012). Depression has been noted to be a risk for disability, low work productivity, and affects overall family health in the United States and worldwide.   Some researchers have found that major depression not only leads to work impairment, but also higher use of health care services (Olchanski, et al., 2013). Of those who suffer with depression, persons with lower socioeconomic levels are hardest hit with only 3% receiving some sort of treatment (CDC, 2011; Kaiser Family Foundation [KFF], 2011). Depression disproportionately affects women, multi-racial persons, and those with disabilities (Dobransky, et al., 2012; NIMH, 2011). Women of the ages of 45-63 are more likely to be depressed, as well as those who are single or have experienced a loss (CDC, 2011). Studies have shown that 30% of women on Medicaid have reported depression with poor mental health days secondary to endemic stresses of life (Cowdery et al., 2010; Khambaty & Stewart, 2013).

Providers of primary care frequently identify mental health needs with depression being one of the most common (Anthony et al., 2010; Burman et al., 2005; Weber &

Snow, 2006). Some estimates are as high as 50-70% of patients in primary care may

have some mental health issues (Beacham et al., 2012). In fact, McLeod and Cordes

(2011) report that up to 8 out of 10 prescriptions for medications for anxiety and

depression come from providers in primary care, perhaps due to patient concerns of being

labeled when seeking specialty psychiatric care, lack of insurance coverage, or

availability of specialized psychiatric care (USPTF, 2009). Depression is often

secondary to physical complaints in office visit discussions. However, it is one of the top

five considerations for a patient scheduling a primary care visit (CDC, 2011), with some

sources reporting that non-physical problems lead many patients to schedule

appointments in primary care 50% of the time (Kathol et al., 2010; Roberts, Robinson,

Stewart, & Right, 2008; Swindle, Rao, & Helmy, 2003). Given the prevalence of

depression in primary care, the presence of other chronic conditions such as hypertension,

arthritis, and diabetes may limit the time necessary for adequate depression screening and

treatment. Depression may go undetected if the patient perceives there is minimal time

for discussion and consequently avoids presenting the condition to the primary care

provider. Further, treatment of depression falls within an advanced scope of practice for

treatment by physician assistants (PA) and nurse practitioners (NP), and is a common

presenting problem in primary care (AANP, 2011; Creamer, 2011).

Target Population: Nurse Practitioners in Primary Care

A primary care provider in the U.S. includes physicians, nurse practitioners (NPs),

and physician assistants (PAs), and is often referred to as "general and family practice,

internal medicine, and pediatrics" (Hing, Hooker, & Ashman, 2011, p.407). A formal

definition of primary care can be characterized as the first point of contact a patient

receives to have comprehensive assessment, diagnosis, and treatment of a health care

problem (American Academy of Family Physicians (AAFP, 2011; American Academy of

Nurse Practitioners (AANP), 2011). Family physicians and internal medicine practices

are considered primary care sources of patient care. Primary care is responsible for

diagnosing acute and chronic problems, providing preventative health services, assessing

patient problems for emergent issues, and referral for procedures and testing (Kravitz &

Ford, 2008).

The trend in primary care the past 25 years (due to physician shortage) is to hire

NPs who, with a Masters' degree in Nursing, are trained to diagnose, manage, and treat

acute and chronic illnesses (AANP, 2011; American College of Physicians (ACP), 2009).

In Texas, it is estimated that there are 8,576 advanced practice NPs, 5,518 physician

assistants, and 25,003 active primary care physicians (KFF, 2011). In 2009, 49% of

physicians were in practices that contained advanced practice nurses and physician

assistants, with primary care being the area of specialization most likely to use advanced

practice NPs or PAs (AHRQ, 2011). In managing patients' acute and chronic needs in a

primary care setting, advanced practice NPs are in a position to assess and treat

depression (Burman, et al., 2005; Hing, et al., 2011; Weber & Snow, 2005).

Co-Morbidity of Chronic Disease and Depression in Primary Care

The co-morbidity of chronic disease and depression represents a challenge for

multiple symptom management. Chronic illnesses such as diabetes, cardiovascular

disease, and asthma often coexist with depression (Beacham, Herbert, Streitwieser, Scheu

11

& Sieber, 2012; Harmon, et al., 2005; Katon, Lin, & Kroenke, 2007; Yates et al., 2007), with these patients needing intensive evaluation for all conditions. Among individuals with diabetes, asthma, or hypertension, it is a challenge to separate the care for chronic diseases and depression (Katon, 2006; Osborn et al., 2010; Upshur, 2005). To better understand the complexity of managing patients with diabetes and coronary heart disease (CHD), Coventry et al. (2011) conducted in-depth interviews and focus groups with health professionals (19), service users (7), and caregivers (3) in the U.K. Their purpose was to gather information from primary care stakeholders to reveal themes in barriers to managing depression in the presence of long-term illnesses of diabetes and CHD. Both health care professionals and patients acknowledged that depression existed with chronic diseases, but approached it differently in explanations. The authors refer to a process of both parties "normalizing" the presence of depression as part of the distress with CHD and diabetes. The process of normalizing (attributing the depression to disease) impairs the recognition of depression, delays its treatment and fails to recognize it as a separate but intertwined entity. In addition, if the care provider has limited time to address depression separately, emotional discussions are neglected. The encounter with the patient and family dealing with chronic disease involves interpretation by the provider when physical and emotional systems are taxed by the presence of chronic diabetes and CHD (Coventry et al., 2011).

Some authors also estimate that 40% of patients seeking primary care for chronic disease also present with depression (Beacham et al., 2012; Yates et al., 2007). Outcomes of depression care may be negatively influenced by the providers prioritizing

the physical aspects of chronic disease during an office visit allowance of time.

Providers have often cited lack of time as a barrier that co-exists in treatment of depression in chronic disease patients. Beacham et al. (2012) refers to the "bi-directional relationship" between chronic illness and depression as having an impact on long-term outcomes of health in these patients (p.365). Untreated depression in chronic illness patients directly impacts quality of life including the ability to provide self-care and daily social functions (Beacham et al., 2012; Katon, 2003).

Complexity of Depression Treatment

Many studies have addressed the complex nature of the treatment of depression care in primary care as well as the prominence. Harmon, Veazie, and Lyness (2006) found that 9.8 million visits were made to office based providers by older patients for depression care in 2001-02 and 64% were in primary care. Referrals for counseling are also an integral key part of the treatment plan and are often under-utilized (Kolbasovsky, Romano, & Jaramillo, 2005). British authors have studied physician management of depression extensively. Cape, Morris, Burd, and Buszewicz (2008) examined the complexity of physicians' explanations of mental health problems in clinical settings, therein attempting to answer the clinical problem of the effects of patient and provider communication on mental health issues. Researchers developed a tool to measure physicians' (GPs') complexity of explanations of mental health problems using GPs (6), psychologists (4), and lay persons (12) in the interpretations of video vignettes. Experts in mental health care then rated their responses for complexity in psychosocial dialogue and explanation of the scenario. A second study for revalidation was completed with

GPs (N=50), and was rated for complexity. Participants also filled out an interest in mental health questionnaire including background -training questions. Complexity scores were evaluated by examining Inter-rater reliability in the pilot studies (correlation coefficient = 0.78 and 0.72). They found that higher complexity scores in GP physicians were associated with greater interest in mental health treatment, a more positive attitude in depression treatment, and more mental health training (Cape et al, 2008). The authors question whether or not better outcomes for depression care will occur if a GP is better able to interpret and understand a patient's mental health problem in a clinical setting.

Haws, Ramjeet, and Gray (2011) found that both physicians and nurses reported depression diagnoses as being a complex process but more so by the nurses in the study. In their U.K. study of post–myocardial infarction patients, they found primary care nurses and physicians (N= 813) underestimated the prevalence of depression in this population. Recent training or continuing education in depression management led to the providers being more accurate in their assessment of the prevalence of depression in their population. In fact, the authors note that if the participant had received depression education within the past 5 years, then they were more likely to be more positive about their role in prioritizing depression assessment than those who had not (t=8.18, p<0.001). These recently trained nurses and physicians noted that they felt confident in screening (t=13.17, p <0.001), made time to discuss depression with this cardiac population (t=5.63, p<0.001), and had confidence in making a diagnosis in these patients (t=3.42, p<0.001). This study helped to identify the need for depression education as it appears to have a positive impact on the accurate recognition of depression.

14

Many patients with mental health issues also have one or more chronic illnesses. The management of mental health issues among those with other chronic diseases occurs primarily in the primary care settings. Studies have examined how primary care manages mental health issues, mainly depression, but the majority of studies have been in the Medicaid or public health sector rather than in private practices. Some studies have attempted to identify barriers to care that exist in diverse populations when seeing only primary care and specialized mental health psychologists and psychiatrists are not included in the clinical setting. These studies have shown that even complex primary care visits often are much shorter than those dealing with mental health issues alone. Upshur (2005) examined using a care manager within the primary care setting to help bridge the gap between primary care and the complex nature of mental health care. She found through pre-intervention interviews with medical providers (physicians and nurses) that many reported a high prevalence of depression patients with other conditions such as hypertension, diabetes, or asthma. The complexity of the links between chronic health conditions and the prevalence of depression leads to primary care being the go to specialty for all health issues, including mental health. Consequently, care managers located in primary care have a great potential to "bridge the divide" (Upshur, 2005, p.353) to assist in this process. Historically, private practices (corporation or physician owned) do not have access to the same funding resources that Medicaid clinics do. Private practices are just now starting to use care managers as a way to meet insurance criteria of patient care while Medicaid populations have used care managers as models for depression care for some time.

Swindle et al. (2003) noted that primary care is under great pressure in time constraints to provide comprehensive medical and mental health care, and that there is increased difficulty in managing both adequately. They also state that despite models of using a care manager to assist with depression patients' care in a primary care setting, it is unclear how to best provide specialty care to patients. Options in the past have included mental health teams, such as psychiatrists or psychologists, or trained nurses following up via phone or home visits with depression patients. Their study's objective included examining the differences of VA patients' responses (N = 268) to individualized treatment plans of medication management and therapy enrollment by a Clinical Nurse Specialist (CNS) experienced in mental health treatment of depression. Those patients who were diagnosed as depressed were randomized into two groups. Patients in the intervention group were given an individualized treatment plan which included care from their PCP, and monitoring of depression symptoms through CNS telephone or clinic visits at intervals of 2, 4 and 8 weeks. Swindle et al. noted no group differences in depression symptoms or satisfaction at 3 or 12 months between the intervention group receiving tailored depression care and the control group managed by their PCP with visits as needed. The authors state that one possible influence to the outcome included using CNS participants who had multiple responsibilities in addition to following up with the study participants. Therefore, it is not clear whether implementation of a care manager in this environment made a difference in patient satisfaction or outcomes (Swindle et al., 2003). In addition, pediatricians have cited time as a barrier in addressing behavioral health. Discussing depression or other behavioral health concerns in a pediatric visit has

been shown to almost double the time spent with a patient. Meadows et al. (2011) found

that the average time spent on a pediatric visit was 8.04 minutes while addressing

behavioral concerns took an average of 19.69 minutes. This rural Midwest study (N=228

pediatric encounters) included health care content at a pediatric visit (independent

variable) as it related to the dependent variables (time spent with the patient, codes

billed, and reimbursement available.) Visits were coded as to medical or behavioral

(aggression, depression, developmental, or other behavior related problems), or both.

The results of this study confirmed previous findings that behavioral health issues do

influence the length of the visit in the pediatric office visit (cite at least one of the studies

that the results of this study confirmed). Overall, this study provided data regarding the

impact of behavioral health on pediatric visits in a rural setting, with suggestions for

integrating a model of on-site mental health care.

There is evidence that integrating depression treatment into primary care has been

encouraged and researched in both the US and Europe. The challenge that many research

studies cite is the process of identification of which patients are in need of specialized

care and then the development of a treatment plan for these patients. Thielke, Vannoy

and Unutzer (2007) identified four categories of barriers that exist in the primary care

setting, which include the disease process, the patient, the provider, and system related

barriers. The researchers first point to the vast range of conditions and symptoms that

exist under the umbrella of "mental health disorders". One aspect of the process of

identifying which symptoms make up the path to diagnosis are based on sorting out

multiple symptoms that cross physical and emotional boundaries. These symptoms can

also include both chronic and complex symptomology at the time of patient presentation.

Secondly, Thielke et al. (2007) identify the competition between multiple illnesses and

chronic conditions. The multiple illnesses and chronic conditions actually compete for

time and evaluation by the provider within the patient's illness presentation. This can

ultimately have a significant impact on the designating of primary and secondary

diagnoses and their treatments. For example, identifying whether fatigue is secondary to

a metabolic disorder such as hypothyroidism or other chronic illness or whether it is a

primary symptom of depression is challenging. The provider must not only attach a

symptom to a diagnosis but also must determine the hierarchy of importance of multiple

diagnoses. This places physical and emotional aspects competing for time at an office

visit. Providers may also serve as a barrier to treatment as their training might be biased

toward a medical model versus a psychotherapeutic model. Thielke et al. (2007) discuss

the stigma of mental illness and the patient's own belief system regarding treatment.

Finally, system barriers for addressing mental health issues may include lack of financial

incentives or reimbursement for mental health counseling, time constraints, limited

follow-up, or limited access to specialist care, or limited capacity to provide mental

health care in primary care (Thielke et al., 2007). Earlier research in depression care

from Nutting et al. (2002) echoes some of the same patient specific barriers such as

resistance to diagnosis or treatment, noncompliance or patients' personal circumstances.

This study also demonstrated that many patients with chronic depression have an

"unusual burden of psychosocial distress" (p. 109) that may play a role in their trigger of

depression and distractions to being able to provide self-care and follow a plan (Nutting

et al, 2002). This study reported that patient specific issues were barriers for 68 % of the

patients. The researchers also determined that provider adherence to depression

guidelines is much more complex and complicated than generally identified by the

literature. Depression care is multifaceted and has important treatment issues of

noncompliance with appointments, medication or counseling that often limit

improvement in symptoms (Nutting et al., 2002).

The concept of a care team (often termed collaborative, case or care manager) to

assist in contacting of depression patients to follow up on treatment has gained

considerable attention for its positive outcomes. In the 1990s, some of these were funded

by NIMH in many regions of the U.S. (Katon & Unutzer, 2006). Managers specifically

following depression patients provided patient education, evaluated treatment compliance

by patients and supported medication management as initiated by primary care

physicians. According to Katon and Unutzer (2006), these collaborative care models

have demonstrated improvements both for depression outcomes and benefits to patients.

These initial NIMH funded trials helped pave the way for larger private foundations such

as the the Robert Wood Johnson Foundation, MacArthur, and the Hogg Foundation to

join in the funding to test these collaborative care models. There is a scarcity of research

literature available, however, for how models from VA hospitals, HRSA-funded clinics

and adaptation of models from public health could apply to private-or hospital-owned

primary care clinics. Katon and Unutzer (2006) agree that future NIMH research needs

to look at "successful collaborative care models for health care delivery systems and new

clinical populations that have not been adequately addressed such as adults with chronic

medical disorders" (p. 185).

A study by Kolbasovsky, Reich, Romano, and Jaramillo (2005) examined the

integration of mental health professionals into primary care with a goal toward improving

diagnoses of depression and medication compliance among patients. Researchers found

that a major challenge to integration of mental health professionals into primary care was

the time commitment required for collaboration between physicians and psychologists.

The New York State Department of Health funded this pilot program that integrated

psychologists into 4 clinical settings to examine variables of location, collaboration and

availability of specialized mental health services in conjunction with primary care.

Depression patients (N=224) were referred to the psychologists where they obtained

individual assessment, assessment of medication compliance and progress, received

education and therapy if desired by the patients. The most common diagnosis of referral

was major depressive disorder (62.6%). Patients who completed the health survey (SF-

12) after 3 months of treatment reported improvements in emotional health (t (49) = -

3.89, $p<$ .001), mental health (t (48) = -7.43, $p<$.001) and social functioning (t (49) = -

3.89, $p<$.001). Several implications for practice were noted including relationship

importance between psychologist and physician for successful collaboration; using

feedback forms to monitor patient satisfaction; ease of referral with positive feedback

from patients; and admission of comfort with depression treatment by physicians on the

questionnaire did not always translate into the clinical setting as a comfort level in real

life practice. The pilot study results did reveal patient improvement in depression

symptoms and also increased physician satisfaction from the integrated program (Kolbasovsky et al., 2005). The key to success was the relationships between providers (primary care and mental health) along with appropriate referrals to the mental health professionals. Patient treatment outcomes for depression have been found to be positively correlated with how comfortable a provider is in diagnosing and treating depression. Few studies, however, have evaluated the nurse practitioners' comfort with diagnosis and treatment of depression in the primary care setting.

Attitudes of Providers in Treating Depression

While many studies of physician attitudes toward managing depression care have been conducted, few have examined similar attributes of nurse practitioners (NP). Quantitative studies dealing with nurse practitioners' attitudes toward depression in primary care have mainly been completed through graduate research. Levels of therapeutic commitment, role competency and role support were explored by Creamer (2011) to expand understanding of the Canadian health system regarding nurse practitioners' roles (N=680) in caring for patients with mental health issues. This particular study focused not only on depression but also on multiple mental health disorders. A mailed survey was sent to 1272 NPs in Canada that used *Mental Health Problem Perceptions Questionnaire (MHPPQ)*, demographic and open-ended questions yielded a high return rate of 57% (N=680). Creamer explored role competency (self-perception of the ability to care for mental health patients), role support (the ability to gain specialist advice/consultation), and therapeutic commitment (an ability to work with mental health patients therapeutically). The cross-sectional study examined relationships

21

between therapeutic commitment, role competency, and role support in NPs as they cared for a patient population with diagnoses of anxiety, depression, and substance abuse. A measure of confidence to manage patients with mental health problems and suicidal disorders was developed as a summative variable from analysis of the subscales. Creamer (2011) found that role commitment and levels of therapeutic commitment were most strongly associated ($r=.754$, $p<.001$). The size of a community, educational level, time since mental health education, and frequency of psychiatric collaboration were reported to influence the confidence to manage, therapeutic commitment, role competency and role support. Study recommendations included increasing NP mental health education, and awareness that NP support is needed when caring for patients with mental health issues. Findings of this study indicate that the population of Canadian NPs in this study felt confident in their role competency, therapeutic commitment, and were supported in their role, but improvement in education and design of the NP educational program is needed to further support these areas for improved patient care (Creamer, 2011). Competent mental health education is needed for NPs to have positive outcomes in patient care.

Several studies have examined the attitudes of various medical providers of primary care and depression. In a recent study, Feth (2008) looked at Nevada physicians (N=14), physician assistants (N=16), and nurse practitioners' (N=65) practice patterns with depression patients using a questionnaire format. Self-efficacy of the provider, type of training, screening practices, and barriers to screening and diagnosis were examined. Through the Patient Care Survey (Adamek & Kaplan, 2000), participants indicated

barriers to depression care.   Physicians (N=14) in the sample reported culture (U= 69.00, p=0.011) and time issues (U=119.5, p=0.018) as barriers to depression care more often than NPs. Feth states that the multicultural population of southern Nevada requires provider interest in the culture and consideration of the patient's cultural belief systems. The researcher alludes to NPs being able to spend more time with the patient, perhaps learning more about their patient population. This may account for the difference in culture being named as a barrier by physicians but not by NPs. There were no significant differences between the three PCP types and diagnosis barriers, informal/formal training, screening practices, and the ability to manage depression patients. This study stands apart from others as it compares providers of depression care and noted barriers to management of depression in primary care.

Patient treatment outcomes for depression have been found to be positively correlated with how comfortable a provider is in diagnosing and treating depression. Few studies, however, have evaluated NP providers' comfort with diagnosis and treatment of depression in the primary care setting. Most recently, Alexander (2011) evaluated rural Kenyan nurse practitioners' (N=44) attitudes towards depression care in private clinics using the *Depression Attitude Questionnaire* (DAQ) (Botega et al., 1992). Groups of providers in rural primary care areas were divided into two groups. Education was provided to the intervention group including options for depression screening tools. In providing depression care screening education to an intervention group, pre and post scores were assessed in both groups. Results indicate that even the brief one hour training and exposure to depression assessment tools in managing the patient's

depression increased a comfort level with treating and managing depression. There were no differences found when comparing the intervention group and the control group (with no training) on their abilities to detect depression based on the assessment of depression practices in their respective primary care settings. In fact, the author cites that "impressive" depression care is being provided in these settings despite no intensive mental health training. The qualitative portion of the study provided insight into diverse practices of screening methods among the NP providers in terms of conversation with their patients. Also, Alexander notes that very few patients considered counseling as an option; medication was the treatment of choice. Alexander also noted the NPs in the study identified barriers including lack of patient resources (money for medications or for transportation), patient resistance, and lack of adequate training for the providers (Alexander, 2011).

Saeed and McCall (2006) examined Abu Dhabi physician knowledge and attitudes towards depression and anxiety in primary care. This quantitative cross-sectional descriptive study used a questionnaire of physician general practitioners (N = 90) who were Ministry of Health employees in primary care with almost equal male/female participants. The mailed questionnaire included the areas of assessment: demographics, practice interest (specialty and interest in psychiatry), knowledge of anxiety and depression management themes, and attitudes toward anxiety and depression. Their findings indicated no significant difference in knowledge or attitudes between GPs and demographics, sex, language, and specialty. Perception of role, attitude, and gender were identified as having significant differences (t=2.49, df=7, p=0.02). There were also

significant differences on attitude and specialty between GPs with no prior training and family medicine specialty (t=2.38, df=39, *p*=0.02 and t=4.86, df=39, and *p*=0.01). Of particular interest, time issues were noted by 73% of respondents. In some clinics, GPs in this region will see up to 80 patients per day, while others may see 40-45. Amount of time spent with patients was not explored in this article, but may certainly have an impact on depth of discussion on psychosocial issues. Of the participants, 82% felt competent in their role to diagnose depression and anxiety and in their ability to help their patients. Physicians were noted to be more comfortable with physical diagnosis rather than emotional issues (Saeed & McCall, 2006). Cultural influences on interpretation of attitude questions may be an issue in this study as cited by the authors. The need for an instrument reflecting local cultural ideals in this population was cited as a necessary future consideration (Saeed & McCall, 2006). For example, even though some of the attitude items were from international scales, the attitude items showed some possible cultural differences in reported perception of competence and role in diagnosing depression and anxiety.

Researchers evaluating both attitudes and barriers in depression diagnosis extensively reviewed 13 qualitative studies from Australia, Canada, England, Germany, Netherlands, and the U.S. (Schumann et al., 2011). Their focus was on physician concepts and barriers for treating depression in primary care. After examining themes of physician attitudes and beliefs regarding etiology, attitudes towards diagnosis, barriers of the disease of depression, patient-related barriers and those from the health care system/society, they found gaps in physician beliefs about diagnostic criteria from

DSM/ICD coding, and real world challenges of patient care in depression patients. In

their review of 239 primary care providers, researchers discovered diagnosis of

depression is best accomplished by having a thorough knowledge of the patient's history

and with an understanding of the impact of their relationship with the patient (Schumann

et al., 2011). In line with this finding, the researchers found that techniques in psychiatry

may not be the same or best approach to use in primary care (Schumann et al., 2011).

Physicians reported varied methods of exploring physical symptoms or listening to the

patient assisted the diagnostic process. Knowing the patient from years of care influenced

the situational aspect of interpreting the patient's depressive symptoms.   For example,

familiarity with emotional responses of a known patient helps tailor the plan of care for

interventions such as referral or treatment with medication.

Some studies examine change of pre-and post-measurements of provider attitudes

toward depression after continuing education on depression care. Upshur and Weinreb

(2008) examined providers' attitudes towards depression care in this cross-sectional

study. Their sample included family practice physicians, family nurse practitioners, and

residents (N=39). The survey included 4 areas of assessment. Part 1 of the questionnaire

included two factors, the first, related to attitudes while the second factor included

questions on effective therapies. Part II of the questionnaire explored certainty related to

skills in recognizing and treating depression. Part III is concerned with a rating of

behaviors implemented in depression treatment. Part IV of the questionnaire assessed

satisfaction, compensation and adequate time to treat depression. The survey was

administered prior to the intervention (tools, training and improved referral, and case

manager assistance) and 2 years after the intervention. Services to providers included

training in depression screening, patient education materials, an expedited referral to

psychiatry system, and phone consultation with psychiatry. Care Managers were also

assigned to oversee the program and provide patient support. Educational training

included tools for patient care, training for providers on depression screening and patient

education materials They found that the intervention reduced the perception that time was

an issue in treating depression (p=.000). (No recognized statistic given. (Trial 1/Trial 2

given but no t statistic) An increase in referrals to mental health services (p=.001) and

referrals to counseling (p=.07) were also identified as a positive outcome of this training.

Recommendations from the *Depression in Primary Care Initiative* indicate that combined

depression treatment with the provider and a care manager changed the provider's belief

that depression was too time consuming. The question remains whether or not this type of

program is realistic to every primary care office in the public sector without additional

funding. Participants included family NPs, residents, and physicians and demonstrated

that practice methods of using a care manager to assist in mental health counseling,

referrals, and follow up did improve access to mental health care within the family

practice. This model is highly suggestive of perception changes after education in the

primary care environment. This study's intervention was within a Medicaid health plan

with 39 providers with economic and system changes for depression care as goals

(Upshur & Weinreb, 2008). While primary care private sectors are starting to recognize

the importance of a care manager for chronic patient disease processes, finances to fund

such positions are still a barrier for many clinics.

Referral patterns among physicians and nurse practitioners for depression patients have been explored by some authors. Anthony et al. (2010) examined a small sample of 40 clinicians through interviews and quantitative instruments examining attitudes regarding depression treatment and referrals. Referral for depression specialty care was triggered by the clinician's comfort in prescribing and counseling depression patients, as well as the complex components of the clinician, patient and practice. Using the *Depression Care Questionnaire* (DAQ) and the *Provider Belief Survey* (Ashworth, 1984), as well as interviews, their findings indicate that comfort level in treating the depression was noted by 86% of clinicians as a marker for referral. Provider comfort level in treating depression may be related to the level of distress being experienced by the patient, the degree of severity of the symptoms or complexity of the patient's situation (for example suicidal ideation or plan, uncontrolled behaviors that are dangerous to the patient or others, or failure on multiple drug and counseling modalities). While the majority of this sample felt comfortable treating basic depression (55%), when severe symptoms and distress were noted, the more severe symptoms increased referrals to mental health specialists (Anthony et al., 2010). The clinician's opinion of complexity (bipolar or depression with another mental disorder or lack of patient's improvement after trials of medications) also influenced who was referred. Patient preference for referral was influenced by the clinician-patient relationship. Once again, patient finances and practice environment affected referral. The common theme of evaluating mental health disorders takes time, and efficiency of patient care was also a consideration in whether or not to refer. The authors state that the limitations of this study are acknowledged in the

small sample size, and the nature of clinician's memory of specific patient situations could not be correlated with referrals or outcomes. Increased mental health training to influence practice was noted to be an enhancement to effective depression care (Anthony et al., 2010).

European pilot studies have been highlighting the National Institute for Health and Clinical Excellence (NICE) guidelines have often examined stepped care approaches suggesting guided self-help as an adjunct therapy in treating mild depression in primary care (Philip, Lucock, & Wilson, 2006). These British researchers examined the role of cognitive behavior therapy as a pilot study whose methodology included guided self-help as part of a team approach with a the general practitioner physician. Participants (N=15) were carefully chosen by the team members with inclusion criteria of appropriate for self-help approach, identification of goals by the patient and adequate literacy abilities. Severe depression, obsessive-compulsive disorders and post-traumatic stress disorders, or those in need of intensive therapy, or at risk of self-harm were excluded (Philip et al., 2006). A Praxis CBT training program was completed by the NP, along with *Overcoming Depression: a five areas approach* workshop. After completion of 3-7 sessions, the fifteen participants had a decrease in their depression and anxiety scores. The authors recognize that there sample was not ethnically diverse. In this practice, the pilot project was considered very successful, and has continued to assist patients in having other options for depression treatment than pharmacological choices alone (Philip et al., 2006).

With the lack of studies regarding NPs' attitudes regarding treatment of depression, there are considerably more studies of physicians' and specialists' attitudes (N=98). Osborn, Kozack, and Wagner (2010) recently examined co-morbidity of diabetes and depression. Using *Pediatrician's Attitudes and Maternal Depression* (PAMD) and the *Confidence in Caring* for depressed patients scale, concepts evaluated included intentions, confidence and barriers. After a program of continuing education, provider attitudes' toward treatment of depression and intentions to assess for depression in diabetic patients improved with the intervention. Of particular interest in this application to depression attitudes was their report of barriers to addressing a patient's depression. These included "inadequate" training (73%, n=52), a lack of time to screen (70%, n=50), lack of time for counseling or education (57.1%, n=40). They also cited the great "overlap" of physical and depressive symptoms (Osborn et al., 2010).

Family medicine physician's attitudes, demographics, and beliefs about depression have been studied as independent and dependent variables. Treatment decisions such as medication, office-based counseling and referral were identified as dependent variables, while attitudes, beliefs, demographics and specialty were independent variables (Hooper et al., 2011). Subjects included 406 PCPs with a mean age of 47.66, diverse ethnicity, and 90% board certified (family medicine 51%), (internal medicine 47.5%), and other (1.5%). Referral to specialists was closely associated to negative physician beliefs about depression while physicians' beliefs did not impact whether they chose medication or office counseling as treatment options. Specialty and race were markers of medication prescription or office based counseling, while beliefs

about depression are and age were determinants in treatment verses referral (Hooper et al., 2011). Again this study was with physicians only and did not include mid-level providers in their evaluation.

Outside of physician attitudes towards depression, pharmacists, mental health clinicians, and medical students' attitudes have been studied. Rong, Glozier, Luscombe, Davenport, Huang, & Hickie, (2011) examined the effects of learning strategies on depression education for Chinese medical students (N=205). Their intervention group that received teaching and self-directed learning on depression in patients showed improvements in the ability to recognize depression and identifying it as a health issue for their population. They found this improvement in attitudes towards depression was sustained over a 6-month period beyond the teaching program. The gap in this study as applied to the current study of nurse practitioners may include cultural differences, students driven work ethic, and difference in practice sites as compared to the U.S.

Pharmacists are considered to be a primary adjunct provider in depression medication involvement. Scheerder, Coster, & Audenhove (2009) adapted the *Depression Attitude Questionnaire* (DAQ) with input from the pharmacy board in Belgium and studied a random sample of 200 pharmacists in Belgium. They found that an older age of pharmacist and negative attitude towards patients with depression was more prevalent. In general, pharmacists showed a positive attitude in dealing with depression-related medication and patients.

Overall, only a handful of quantitative studies have looked at Nurse Practitioners' attitudes towards patients with depression. A care provider's depression attitudes and

31

recognition of patient's unique situations can help with outcomes of depression care. If

screening or consideration that depression exists behind some physical symptoms, then it

can go unrecognized and untreated, thus affecting the quality of life.

Barriers to Depression Care

A central theme in the literature regarding primary care treatment of depression is

the topic of barriers or obstacles to providing depression care (Alexander, 2011; Adamek

& Kaplan, 2000; Beacham et al., 2012; Belnap et al., 2006; Burman et al, 2005; Henke et

al., 2008; Kathol et al., 2010; Palinkas et al., 2010; Sobczak, 2009). Defragmentation of

the mental health and physical health services are discussed in several U.K. and U.S.

studies (Henke et al., 2008; Kathol et al., 2010; Kirchner et al., 2004). A study conducted

by Palinkas et al. (2010) as well as other studies, reported barriers including not only

physician workload, but also the dynamic relationship of patients and their providers and

the effects of a lack of staff and finances to continue treatment of collaborative

depression care (Flaskerud, 2010; Upshur & Weinreb, 2008). A second barrier of

attitudes has been identified in the literature. Upshur and Weinreb (2008) agree that the

views of the primary care provider can influence the treatment a patient receives while

Flaskerud (2010) sites NP quality of care in being comprehensive adding to the

collaborative depression care.

Perhaps the most detailed study on barriers to providing mental health care for

patients over 65 was conducted to gain information on patterns of caring for mental

health problems in primary care. Physicians (N=166) and NPs (N=340) were surveyed to

ascertain their treatment and referral practices in an elder population with depression and

suicidal patients. Their results revealed an unwillingness of the patient to seek help or

not complying with prescribed treatment as the two most commonly reported obstacles

by both physicians and nurse practitioners (Adamek & Kaplan, 2000). Lack of time,

restrictions on mental health care coverage, and lack of referral resources were also noted

(Adamek & Kaplan, 2000; Feth, 2008). Other barriers cited include lack of follow up or

attention to the mental health issue or inadequate training, a lack of time to screen, and a

lack of time for counseling or education (Connelly et al., 2007; Creamer, 2011; Osborn,

Kozack & Wagner, 2010; Meadows et al., 2011). In addition, lack of a plan of care for

follow up and confusion over which screening tool to use can also be noted as a barrier

for depression screening (Richardson & Puskar, 2012).

It has been noted that depression care in primary care was also consistent with

specialized psychiatric care in terms of outcomes (Palinkas et al., 2010). Most NPs noted

in their practice that they were comfortable treating depression and reported positive

feedback and experiences with treatment, but they also noted that concerns regarding

finances for their patients "influenced their decision-making" (Burman et al., 2005, p.

378). Burman et al. (2005) evaluated treatment practices of NPs (N=94) for anxiety and

depression patients in Wyoming. When questioned about barriers to treatment of

depression in patients, over 50% of the NP participants most often reported finances (low

income), insurance status (none or inadequate) as inhibitors to patients' compliance or

even attempting an office visit to discuss their symptoms. Limited time in office visits,

family and patient attitudes, stigma, lack of referral options, and patient resistance to

diagnosis were other perceived barriers in over 30% of respondents (Burman et al, 2005).

33

In addition, Groh (2013) found in her study of depression in rural women, that most depression patients pursue care from their local care provider, and often an NP is their local provider. She found that 36% of her sample of participants (N=140) self-reported as having depression. The implications for mental health practice in a rural area are that patient education provides empowerment, and helps rural women join in their care despite the lack of anonymity that is sometimes noted in rural areas (Groh, 2013) leading to a perceived lack of privacy. Barriers to care are also discussed in this study regarding short office visits, patient load, as well as lack of specialists for referral in rural areas (Gamm, Stone, & Pittman, 2003).

The highly medically-complex patient with chronic health issues may be at risk for depression, and screening of these persons who are seen regularly in primary care needs to occur. Primary care practice pressures (time, workload, and reimbursement) may also need to be reduced in order to provide a quality of care for mental health in primary care will continue to be the initiators of depression care at the patients' point of entry into the healthcare system. As the topic of access to care continues to be debated, primary care will be in the forefront and be expected to carry their load and provide comprehensive care to their clientele. For as NPs used to be known for their amount of time spent with patients, this is certainly under scrutiny in this financial crisis of healthcare. Philip, Lucock, & Wilson (2006) examined a pilot project involving nurse practitioners and self-guided help in small groups (N=15) by the primary care staff and NPs. Although they cannot state that the invention caused the outcome, as this was not a controlled study, this program of self-help being guided by NPs, has been considered by

this specific practice and the program has continued. Gaps in this program would need to examine the financial feasibility to large primary care clinics.   From a patient's perspective, Gensichen et al., (2012) found that using collaborative care in a German practice, extensively trained health care assistants provided additional phone support in their sample of 41 depressed clients. The patients reported a positive effect from the regular contact over a period of a year. Again, financial resources must be in place to implement this kind of collaborative care model.

Summary

Health professionals are in a unique position to influence treatment outcomes in the management of depression. Unfortunately, along with the previously noted barriers of cost and access to health care, other significant barriers exist in the care of persons with depression that are less easily measured. These other barriers include negative attitudes from both society and even from the affected themselves about mental illness that can lead to denial of symptoms, delay of treatment, loss of or being excluded from employment, housing, and/or relationships. Current studies of depression treatment in primary care have focused on physician attitudes, social workers' attitudes, and even pharmacists' attitudes towards depressed clients. Very little research has been completed with Nurse Practitioners and their attitudes and perceptions of treatment of depression in primary care (Burman et al., 2005; Creamer, 2011; Hing et al., 2011).

The CDC National Center for Health Statistics (2011) reports that 49% of office-based physicians worked with Nurse Practitioners (Elliott, 2012). Cawley (2011) noted that Nurse Practitioners provide 36% of primary patient care in the US, and therefore are

also providing a significant amount of care to depressed clients. Accurate assessment of the patient's emotional status as well as appropriate treatment and referral are crucial points for patient quality of life and improved functioning that promote occupational success and family stability.

CHAPTER III

METHODOLOGY

This study used a mixed method design obtaining primary data from a survey administered to adult and family Texas Nurse Practitioners.   The following chapter describes the population and sample under study, the IRB review process, the validity and reliability of the instrumentation, and the statistical analyses completed.

Population and Sample

The participants for this study were a convenience sample of nurse practitioners (NPs) obtained from the Texas State Board of Nursing listing. A total of 6356 (875 Adult and 5481 Family) NPs were invited to participate. The final sample consisted of 121 who responded and completed the online survey.

Human Participant Protection

Institutional Review Board exempt approval was granted by Texas Woman's University (Appendix A). The Texas State Board of Nursing does not require IRB for use of its members as study participants. Participants were notified regarding the current study's purpose and design. Participants who began the study could choose to discontinue or opt out at any time regardless of the reason without penalty. Results were not connected to individual participants.

Sampling Procedures

A sample of Nurse Practitioners (Adult and Family) was obtained from the Board of Nursing Data Base. Postcards with information on the purpose of the study were mailed to potential participants (Appendix B). The card provided a web address link for access to the survey on Psych Data, as well as an overview of the study's purpose. The card also contained the following statement: "There is a potential risk of loss of confidentiality in all email, downloading, and Internet transactions." Participants were asked to complete a demographic profile that included their age, gender, ethnicity, and practice location by approximate population. The completed questionnaire constituted their informed consent to act as a participant in this research. The approximate time required to complete the survey was 30 minutes and participation was completely voluntary and anonymous throughout the study. Only those participants who completed the surveys in their entirety were used in the final statistical analyses.

Instrumentation

The first section of the survey included an informed consent (Appendix C). The initial section of the questionnaire gathered demographic data and practice data from the nurse practitioner participants (Appendix D). To assess providers' perceptions of treatment for the patient with depression, the four-part *Primary Care Provider Questionnaire* was administered (Appendix D). This information was used to examine environmental and personal factors related to depression treatment and care. Full Scale reliability of this questionnaire has been identified as having an overall alpha internal reliability of .734. (C. Upshur, personal communication October 15, 2012). Part 1 of the

questionnaire includes two factors: the first relates to attitudes (alpha of .584), while the second factor relates to effective therapies (alpha of .715). Part II of the questionnaire explores certainty on skills in recognizing and treating depression (alpha ranges from .66-.82). Part III concerns rating of behaviors implemented in depression treatment (alpha of .68). Part IV of the questionnaire explores satisfaction, compensation and adequate time to treat depression (alpha of .55) (C. Upshur, personal communication, October 15, 2012). To determine internal consistency and reliability, an inter-item reliability correlation matrix was produced. The demographic questionnaire contained an area for participant explanations of practice-specific qualitative themes.

Data Analysis

Demographic data was analyzed with descriptive statistics. A series of regressions were used to assess the effect of demographics, perceived barriers, and professional characteristics on attitude scores of the *Primary Care Provider Questionnaire* (Upshur & Weinreb, 2008), and on the self-rating of skills in recognizing and treating depression, the rating of behaviors implemented in depression treatment, and ratings of satisfaction, compensation, and adequacy of time to treat depression.

The Statistical Package for Social Sciences (SPSS), version 21, was used to perform descriptive and inferential analyses for this study. Measures of central tendency were used to assess participant demographics of age, gender and ethnicity, frequencies and percentages of professional characteristics (population, practice, insured patients, average patients seen daily, continuing education hours, years as a nurse practitioner), and means and standard deviation of dependent continuous variables (attitude, behavior,

39

skill and satisfaction scores). Preliminary analyses included factor and reliability

analyses of the scale variables (attitude, skill, behavior, satisfaction, compensation, and

adequacy of time score).   Relationships among independent variables of age, ethnicity,

population, and scales were analyzed with frequencies and percentages between

categorical independent variables.   Relationships between dependent variables, and

relationships between independent (I) and dependent (D) variables were examined.

Research question 1 (examining IV of population with DV of attitude, skill,

behavior, satisfaction, compensation and adequacy of time) scores were analyzed with

MANOVA while questions 2 and 3 (barriers in treatment and education) were analyzed

with frequency and percentages. Hypotheses were examined with multiple linear

regression. Factor and Reliability analyses of scales indicating relationships among the

IVs were examined by crosstabs Chi Square tables ranging from 2-5 levels.   In addition,

multiple linear regression was used for predicting attitude from demographics,

professional characteristics, and perceived barriers; for predicting skills from

demographics, professional characteristics, and perceived barriers; predicting behavior

from demographics, professional characteristics and perceived barriers; predicting

satisfaction, compensation and adequacy of time from demographics, professional

characteristics, and perceived barriers. Individual items on the attitude scale were

examined with multiple regression from demographics, professional characteristics and

perceived barriers, and individual items on the behavior scale from demographics,

professional characteristics and perceived barriers.

Summary

A convenience sample of Texas Nurse Practitioners (N=121) completed the Demographics and Practice Data and the *Primary Care Provider Questionnaire*. After consenting to participate in the study, NP participants accessed the electronic survey from the Psych Data link from the invitation card. Data was analyzed using descriptive statistics, Chi Square, and multiple linear regressions.

CHAPTER IV

RESULTS

The purpose of this study was to identify and evaluate NPs' perceptions and identification of barriers to depression care in primary care settings in Texas. A second purpose was to evaluate the research questions: are there any perceived differences in perceptions of treatment for depression based on rural versus urban NPs; what barriers do NPs report in their treatment of depression in primary care; and what barriers do NPs report as present in the education of those with depression?

Data from demographic and professional characteristics and from the *Primary Care Provider Questionnaire* were analyzed from a mixed methods standpoint. Demographic data helped to define the population of adult and family NPs in Texas (N=121) responding to the study. Descriptive data were obtained which illustrated professional characteristics of the NP practice site. Factor and Reliability Analyses of Scales (Attitude score, Skills score, Behavior score, Satisfaction, Compensation, and Adequacy of time score), Multiple Logistic regression, and Pearson's correlation were run on the perceived barriers. An open-ended question gave participants an opportunity to add a qualitative angle to the data.

Demographics

A total of 6,356 family and adult NPs in Texas were invited to participate in this study. Responses were received from 121 participants of whom 103 were family NPs and 18 were adult NPs. Two participants reported being certified in both adult and

family and two reported being certified in psychiatric and family. Within this sample, 6.6% were male (N=8), and 93.4% were female (N=113). Most of the participants identified themselves as Caucasian (N=92 or 76%), followed by Hispanic or Latino (N=13 or10.7%), African American (N=11 or 9.1%), and Asian (N=5 or 4.1%).

Mean participant age was 48 with a range from ages 26 to 72 (Table 1). Median age of the sample was 49 with a mode of 51. The largest percentage of respondents was in the 56 and older category (N=37, 30.6%), followed by ages 46-55 (N=34, 28.1%), and 36-45 (N=32, 26.4%). The youngest NP category (N=18) was ages 26 to 35 (14.9%). The sample showed 43 (35.5%) with 1-5 years of experience as an NP; 29 (24%) with 11-15 years; 27 (22.3%) with 16 or more years as an NP while 22 (18.2%) reported 6-10 years of experience (Table 2).

Table 1

Frequencies and Percentages for Categorical Demographic Variables

	n	%
Age		
26 to 35	18	14.9
36 to 45	32	26.4
46 to 55	34	28.1
56 and older	37	30.6
Missing	0	.0
Gender		
Male	8	6.6
Female	113	93.4
Missing	0	.0
Ethnicity		
Non-Caucasian	29	24.0
Caucasian	92	76.0
Missing	0	.0

Note. Frequencies not summing to *N* = 121 and percentages not summing to 100 reflect missing data.

Urban and rural classifications of the population areas served were based on census definitions. Only 9 participants identified themselves as their primary practice areas being below 2,500 in population while suburban (or urban clusters between 2,500 and 50,000) showed a response of 44 participants. Urban respondents totaled 52 (43%). For the purpose of statistical analysis, rural and suburban categories were combined to make up 43.8% of the sample (N=53) and urban totaled 43% of the sample (N=52). This information was missing on 13.2% of sample. Physicians (N=49) were most often cited as owning the practice where NPs were employed (40.5%); with corporation owned (N=23) 19%, hospital owned (N=25) 20.7%, state or federally owned (N=18) 14.9%, and 5% NP owned (N=6) also reported. Approximately half of the NP respondents (N=58, 47.9%) reported more than 75% of their patients were insured. Only 21 NP respondents (17.4%) reported fewer than 25% were insured.

The most frequent patient load seen daily by the NP participants was 16-20 (N=41, 33.9%). The second highest volume category was 11-15 patients daily (N=30, 24.8%) followed by the 21 or more seen daily (N = 28, 23.1%). A volume of 0-10 average patients seen daily was reported by 22 (18.2%) of the NPs (Table 2).

Table 2

Frequencies and Percentages for Professional Characteristics Variables

	n	%
Population		
Rural Suburban	53	43.8
Urban	52	43.0
Missing	16	13.2
Practice Owned		
Physicians	49	40.5
Nurse Practitioners	6	5.0
Corporation	23	19.0
Hospital owned	25	20.7
State or Federally owned	18	14.9
Missing	0	.0
Percent Insured Patients		
0 - 25	21	17.4
26 - 50	13	10.7
51 - 75	28	23.1
76 - 100	58	47.9
Missing	1	.8
0 - 10	22	18.2
11 - 15	30	24.8
16 - 20	41	33.9
21 or more	28	23.1
Missing	0	.0
Continuing Education (CE)		
Yes	60	49.6
No	61	50.4
Missing	0	.0
CE Hours		
0 to 1 Hour	21	17.4
2 to 5 Hours	29	24.0
6 Hours or More	13	10.7
Missing	58	47.9

(Continued)

Years as Nurse Practitioner		
1 - 5	43	35.5
6 - 10	22	18.2
11 - 15	29	24.0
16 or more	27	22.3
Missing	0	.0

Note. Frequencies not summing to $N = 121$ and percentages not summing to 100 reflect missing data.

Continuing Education training in the past one year was reported by 49.6% of the sample with 50.4% reporting no continuing education in depression the past year. Respondents with 2-5 hours the past year of depression education were the highest at 24.0 % (N=29) (Table 2).

Relationships among Demographics/Professional Characteristics

Demographic markers consisted of age, sex, and ethnicity. Professional characteristics identified in the questionnaire were population served, practice-owned, percent-insured patients, average number of patients seen daily, continuing education, hours of continuing education, and years as an NP (Appendix E Table 1).

Age of the NP was found to have a significant relationship with ethnicity; a greater proportion of the Caucasian group were noted in the 56 and older group (91.9.0%) compared to those non Caucasian whose prevalence is shown in the 36-45 and 46-55 ranges (37.9%) (X^2 (3, N=121) = 8.351, p=.039)(Appendix E, Table 1). Likewise, age also was found to have a significant relationship with continuing education; a greater proportion of NPs ages 56 and older have attended continuing education in the past one year compared to those between the ages of 46 to 55, 36 to 45, and 26 to 35 ranges.

Overall, a greater proportion of NPs in each age bracket reported attending continuing education compared to the next younger age bracket. X^2 (3, N=121) = 11.71, p=.008) (Appendix E Table 1)

Ethnicity was found to have a significant relationship with population; a greater proportion of non-Caucasian NPs were from Rural/Suburban areas, when compared to Caucasian NPs (χ^2 (3, N=121) =7.49, p = .006). Ethnicity showed a significant relationship with years as an NP; a greater proportion of non-Caucasian NPs had 1-5 years of experience as an NP (55.2%) when compared to Caucasians (29.3%) (χ^2 (3, N=121) = 9.053, p < .029). A greater proportion of Caucasian NPs (26.1%) had 11-15 years, and 16 or more years of experience (27.2%) compared to non-Caucasian (17.2% and 6.9% respectively). Ethnicity showed a significant relationship with Education Barrier: Lack of referral Options; a greater proportion of non-Caucasian NPs reported a lack of referral options as an educational barrier (65.5%), when compared to the 44.6% of Caucasians (X^2 (1, N=121) = 3.872, p < .049).

Percent-insured patients showed a significant relationship with years as NP; a greater proportion of practitioners with 11-15 years of experience have 76-100 percent-insured patients compared to any other percent group. This pattern holds true for NPs with 1-5 years of experience as well. In general NPs in this sample with 1-5 and 11-15 years of experience have more insured patients. NPs with 6-10 years or 16 or more years of experience reported fewer insured patients. Also, percent insured patients category showed a significant relationship with *Education Barrier: Time Restriction*; a greater proportion of NPs who reported time restriction as an educational barrier were in the

47

category of 76-100 percent insured patients (77.6%), when compared to nurses with 0 to

25 % category, 26-50% category and 51-75% category insured patients. In addition, a

greater proportion of NPs who did not report time restriction as an educational barrier had

more patients in the 0 to 25 percent insured patients, when compared to nurses with 26-

50, 51-75, and 76-100 percent insured categories. This study also showed a significant

relationship with *Education Barrier: Lack of Referral Options* and insured patients; a

greater proportion of NPs who reported lack of referral options as an educational barrier

had predominately 26-50 % insured patients (84.6%), when compared to NPs with 0 to

25 % , 51-75 % and 76-100 % insured patients (χ2 (3, N=121) = 8.81, *p* = .03).

The category of percent insured patients also showed a significant relationship

with *Treatment Barrier: Patient Resist Comply Issues*; a greater proportion of NPs who

did not report patient resistance/compliance issues as a treatment barrier had 0 to 25

percent insured patients (61.9%), when compared to NPs with more than 25 percent

insured patients (χ2 (3, 121) = 9.49, *p* = .023)

Average patients seen daily showed a significant relationship with the report of

Education Barrier: Time Restriction; a greater proportion of NPs who see an average of

0-10 patients a day did not report time restriction as an educational barrier, when

compared to NPs who see more than 10 patients on average per day (χ2 (3, 121) = 11.67,

p = .009). In addition, a greater proportion of NPs who reported patient

resistance/compliance issues as a treatment barrier see an average of 16-20 patients daily

(82.9%), when compared to NPs who see an average of 0-10, 11-15, or 21 or more

patients daily (χ2 (3, 121) = 8.80, *p* = .03).

Continuing education participation showed a significant relationship with years as an NP; a greater proportion of NPs who did not participate in depression continuing education for the past year had 1 to 5 years of experience as an NP (49.2%), when compared to NPs who were participating in depression continuing education (21.7%). In addition, a greater proportion of NPs who were reporting continuing education the past year had 16 or more years of experience as an NP (35%), when compared to NPs who had not participated in recent continuing education in this experience group (9.8%). ($\chi2$ (3, 121) = 15.54, p = .001).

Educational and Treatment Barriers

Potential barriers of depression care were assessed in the questionnaire with questions 14 and 15. ***Educational and Treatment*** barriers were identified in the literature and categorized by (1) time restriction, (2) complexity of patient population, (3) patient resistance-compliance issues, and (4) lack of referral options. Participants were given the opportunity to check the box(es) that reflected their experiences in educating and treating depression patients. Results for Educational Barriers are presented in Table 3.

Frequencies and percentages were run on the four education barriers answering the research question (number 3) *What barriers do Nurse Practitioners report as present in the education of those with depression*? Results revealed that 81 NPs (66.9%) reported time restriction while 40 NPs (33.1% of the sample) did not report the same barrier. Results also revealed that 63 nurses (52.1% of the sample) reported complexity and comorbidity of patient population while 58 nurses (47.9% of the sample) did not. In addition, 64 NPs (52.9% of the sample) reported patient resistance and compliance issues

while 57 NPs (47.1% of the sample) did not. Finally, 61 NPs (50.4% of the sample)

reported lack of referral options while 60 NPs (49.6% of the sample) did not (Table 3).

Table 3

Frequencies and Percentages for Education Barriers Variables

	n	%
Edu Barrier1: Time Restriction		
Time restrictions - UnChecked	40	33.1
Time restrictions - Checked	81	66.9
Edu Barrier2: Complex Co-Morbid Patient Pop.		
Complexity and co-morbidity of patient population - UnChecked	58	47.9
Complexity and co-morbidity of patient population – Checked	63	52.1
Edu Barrier3: Patient Resist Comply Issues		
Patient resistance/compliance issues - UnChecked	57	47.1
Patient resistance/compliance issues - Checked	64	52.9
Edu Barrier4: Lack of Refer Options		
Lack of referral options - UnChecked	61	50.4
Lack of referral options - Checked	60	49.6

Note. Frequencies not summing to *N* = 121 and percentages not summing to 100 reflect missing data.

Educational Barrier 1: Time Restrictions in regard to education of patients and

lack of time was selected most often (N=81, 66.9%). Other educational barriers

(Complex-Comorbidity of patient population, patient resistance/compliance and lack of

referral options) were selected less frequently as identified in Table 3.

Treatment Barrier variables are presented in Table 4. Participants did not report

time restrictions in treatment as often as patient resistance/compliance (66.9%) and

complex/co-morbidity of patient population (62.8%). Lack of referral options (61.2%) was selected more often than time restriction (39.7%) for treatment barriers.

Frequencies and percentages were performed on the four treatment barriers (Table 4) from Research Question 2 (What barriers do Nurse Practitioners report in their treatment of depression in primary care?). Results revealed that 73 NPs (60.3% of the sample) did not report time restrictions while 48 NPs (39.7% of the sample) did. Results also revealed that 76 NPs (62.8% of the sample) reported complexity and comorbidity of the patient population while 45 NPs (37.2% of the sample) did not. In addition, 81 NPs (66.9% of the sample) reported patient resistance and compliance issues while 40 NPs (33.1% of the sample) did not. Finally, 74 NPs (61.2% of the sample) reported a lack of referral options while 47 NPs (38.8% of the sample) did not. Qualitative themes from open-ended questions on caring for depressed patients are discussed later in this chapter.

Table 4

Frequencies and Percentages for Treatment Barriers Variables

	n	*%*
Treatment Barrier1: Time Restrictions		
Time restrictions - UnChecked	73	60.3
Time restrictions - Checked	48	39.7
Treatment Barrier2: Complex Co-Morbid Patient Population		
Complexity and co-morbidity of patient population - UnChecked	45	37.2
Complexity and co-morbidity of patient population - Checked	76	62.8
Treatment Barrier3: Patient Resist Comply Issues		
Patient resistance/compliance issues - UnChecked	40	33.1
Patient resistance/compliance issues - Checked	81	66.9
Treatment Barrier4: Lack of Refer Options		
Lack of referral options - UnChecked	47	38.8
Lack of referral options - Checked	74	61.2

Note. Frequencies not summing to *N* = 121 and percentages not summing to 100 reflect missing data.

To address Research Question 1 (Are there any perceived differences in perceptions of treatment for depression based on rural versus urban Nurse Practitioners?), a MANOVA was used to observe differences in Attitude score, Skills score, Behavior score, and Satisfaction, Compensation, and Adequacy of time score based on rural-suburban versus urban Nurse Practitioners. Results revealed no significant differences in perceptions of treatment between populations.

Dependent Variables

Dependent variables were determined from the *Primary Care Provider Questionnaire* on depression attributes in practice consisting of self-ratings of an attitude score, skills score, behavior score and rating satisfaction, compensation and adequacy of time score. Factor and reliability analyses of scales (Attitude score, Skills score, Behavior score, Satisfaction, Compensation, and Adequacy of time score) are presented in Table 5.

Factor and reliability analyses of the scales showed the attitude items (6 items) loaded on two factors and did not have adequate inter item reliability when forced into one item as dictated by the scoring key for the instrument (Cronbach's alpha = .54), however the inter-item reliability for this scale is in line with some of the previous research. The individual correlation coefficients among the items are presented below in Table 7 in order to provide more detail about the relationships among the items. Primary regression analyses were also conducted on the individual items in addition to the overall score due to the low reliability of the scale. The skills items (6 items) loaded on two factors but had adequate inter item reliability when forced into one item as dictated by the scoring key for the instrument (Cronbach's alpha = .70). The behavior items (6 items) were loaded on three factors and had poor inter item reliability when forced into one item as dictated by the scoring key for the instrument (Cronbach's alpha = .34). Similarly to how the attitude items were treated, the individual correlation coefficients among the behavior items are presented below in Table 7 in order to provide more detail about the relationships among the items. Primary regression analyses were also conducted on the

individual items in addition to the overall score due to the low reliability of the scale

(Appendix E Table 7). Finally, the satisfaction items (made up of 3 items) loaded on 1

factor and had adequate inter item reliability (Cronbach's alpha = .69) so a total score of

these items was determined.

Table 5

Factor and Reliability Analyses of Questionnaire Scales

	Factor Loadings	Cronbach's Alpha
Attitude Items		.534
Depression, as a patient problem in primary care, is overemphasized.	.594	
Depression is one of the most frequent problems I see in my practice.	.583	
Treating depression is too time-consuming to be practical in my practice.	.732	
Most depressed patients are better off being treated by mental health specialists.	.659	
Drug treatment is very effective in treating depression.	.458	
Counseling or therapy is very effective in treating depression.	.106	
Skills Items		.703
Recognize depression in most of the patients you see in your office who actually have depression?	.512	
Recognize when a patient who is suffering from depression is potentially suicidal.	.589	
Effectively treat your depressed patients with medication.	.490	
Get timely and helpful advice from a psychiatrist or psychologist in a psychiatric emergency.	.751	
Accurately describe to a depressed patient how the mental health triage and treatment system works.	.723	
Ensure that a depressed patient who needs it receives timely treatment from a mental health specialist.	.714	

Behavior Items		.375
Start patients on antidepressant medications.	.845	
Give patient supportive counseling yourself (e.g. advice, reassurance, supportive problem solving).	.776	
Write the diagnosis of depression in the patient's chart.	.790	
Tell the patient to contact his or her community mental health agency or insurance company for a referral to a mental health specialist.	-.365	
Refer the patient yourself to a mental health specialist.	.125	
Call a consulting psychiatrist.	.013	
Provide educational material to patients and families.	.295	
Satisfaction Items		.683
I find great satisfaction in treating depressed patients.	.669	
I am fairly compensated for my treatment of depressed patients.	.856	
I am not constrained by time pressure while I am in with a depressed patient.	.818	

Note. Bolded items were reverse coded prior to entry into the factor analysis and reliability analysis in accordance with the scoring system of the instrument.

Table 6 examines the relationship between the attitude questions in part I of the questionnaire. All items were entered into the correlation matrix such that higher scores mean more agreement with the item. However, items 1, 3, and 4 were reverse coded prior to entry into the reliability analysis shown in Table 5 based on the scoring system of the analysis. Therefore, bolded items would be expected to have a negative valence for higher reliability and non-bolded items would be expected to have a positive valence. As shown, most of the significant relationships are in the expected direction with the exception of the significant positive correlation between *Most depressed patients are better off being treated by mental health specialists* and *Counseling or therapy is very effective in treating depression* ($r = .217$). This finding suggests that participants who

agree that most depressed patients are better off being treated by mental health specialists also agreed that counseling or therapy is very effective in treating depression. What is perhaps more notable is the lack of a significant relationship between over half of the attitudes items indicating no discernible pattern between responses to many of the questions.

Table 6

Pearson's Product–Moment Correlations among Attitude Section

	1	2	3	4	5
2	**-.189***				
3	.154	**-.314****			
4	.239**	**-.118**	.516**		
5	**-.315****	.169	**-.079**	**-.036**	
6	**.001**	.168	**.036**	**.217***	.357**

Note. * *p* < .05, ** *p* < .01. 1 = Depression, as a patient problem in primary care, is overemphasized; 2 = Depression is one of the most frequent problems I see in my practice; 3 = Treating depression is too time-consuming to be practical in my practice; 4 = Most depressed patients are better off being treated by mental health specialists; 5 = Drug treatment is very effective in treating depression; 6 = Counseling or therapy is very effective in treating depression. Bolded items would be expected to have a negative valence for higher reliability of the overall score.

Table 7 examines the relationships between the behaviors questions in part III of the questionnaire. All items were entered into the correlation matrix such that higher scores mean more agreement with the item. However, item 4 was reverse coded prior to

entry into the reliability analysis shown in Table 5 based on the scoring system of the

analysis. Therefore, bolded items would be expected to have a negative valence for

higher reliability and non-bolded items would be expected to have a positive valence. As

shown, most of the relationships among the items were non-significant which is one

factor leading to the low reliability of this scale. Only two strong positive correlations

were found and occurred between *start patients on antidepressant medications* and *give

patient supportive counseling yourself* ($r = .508$), and *start patients on antidepressant

medications* and *write the diagnosis of depression in the patient's chart* ($r = .675$). These

correlations indicate that more agreement with one question was associated with more

agreement on the other. Two of the remaining 5 significant correlations had the wrong

valence based on the direction that would increase reliability. Overall, this pattern of

correlations demonstrates why low reliability of the scale was found and why individual

analysis of the items may provide more information than analysis on the scale score alone

(Appendix E, Table 2).

Table 7

Pearson's Product–Moment Correlations among Behaviors Self Rating

	1	2	3	4	5	6
2	.508 **					
3	.675 **	.391 **				
4	**.150**	**.203 ***	**.134**			
5	-.091	.096	-.015	**.307 ****		
6	.014	-.092	.030	**-.042**	.184 *	
7	.078	.304 **	.027	**.006**	.158	.148

Note. * $p < .05$, ** $p < .01$. 1 = Start patients on antidepressant medications; 2 = Give patient supportive counseling yourself (e.g. advice, reassurance, supportive problem solving); 3 = Write the diagnosis of depression in the patient's chart; 4 = Tell the patient to contact his or her community mental health agency or insurance company for a refer to a mental health specialist; 5 = Refer the patient yourself to a mental health specialist; 6 = Call a consulting psychiatrist; 7 = Provide educational material to patients and families. Bolded items would be expected to have a negative valence for higher reliability of the overall score.

Table 8 presents Means and Standard Deviations for Attitude score, Skills score, Behavior score, Satisfaction, Compensation, and Adequacy of time score. Participant's scores in each category of the questionnaire show different ranges for each section based on ranking of self- ratings.

Table 8

Means and Standard Deviations for Attitude score, Skills score, Behavior score,

Satisfaction, Compensation, and Adequacy of time score

	N	*M*	*SD*	Min	Max
Attitude score	121	18.16	2.26	12	23
Skills score	121	15.71	2.94	9	24
Behavior score	121	20.85	2.42	13	26
Satisfaction, Compensation, and Adequacy of time score	121	7.31	1.89	3	12

Note. *N* not equal to 121 reflect missing data.

Relationships among Dependent Variables

Dependent variables were determined from the *Primary Care Provider*

Questionnaire on depression attributes in practice consisting of self-ratings of an attitude

score (Part I), skill score (Part II), NP clinical behavior score (Part III) and rating

satisfaction, compensation and adequacy of time score (Part IV). Correlations between

each pair of variables were statistically significant and positive except the pair of

behavior score and satisfaction/compensation/adequacy of time score, indicating that

higher scores on one variable were associated with higher scores on the other variables

(Table 9). For example, self-rating of skills score was correlated with satisfaction,

compensation, and adequacy of time score ($r = .414$, $p < .01$) as was the self-rated clinical

behavior and skills score ($r = .471$, $p < .01$). There was not a significant relationship

between the behavior score and the satisfaction/compensation/adequacy of time score

(Table 9).

Professional characteristics were marked by type of board certification (adult or

family), practice owned, percent-insured patients, average patients seen, continuing

education, hours for depression treatment and years practicing as an NP.

Table 9

Pearson's Product–Moment Correlations among Attitude score, Skills score, Behavior

score, Satisfaction, Compensation, and Adequacy of time score

	Attitude score	Skills score	Behavior score
Attitude score			
Skills score	.398 **		
Behavior score	.360 **	.471 **	
Satisfaction, Compensation, and Adequacy of time score	.236 **	.414 **	.094

Note. * $p < .05$, ** $p < .01$.

Relationships between Independent and Dependent Variables

The MANOVA conducted to test for differences on the 4 dependent variables

(Attitude, Skills, Behavior, and Satisfaction, Compensation, and Adequacy of Time

scores) by *Education Barrier: Time Restriction* revealed a significant multivariate

(Appendix E Table 4). Further examination of the univariate tests revealed that attitude

scores showed a significant relationship with *Education Barrier: Time Restriction*; NPs

who did not report time restriction as an education barrier had a higher attitude score than

NPs who did report this barrier (Appendix E Table 3). Satisfaction, compensation and

adequacy of time score also showed a significant relationship with *Education Barrier:*

Time Restriction. NPs who did not report time restriction as an education barrier had a

higher satisfaction, compensation, and adequacy score than NPs who did report this

barrier (Appendix E Table 3). Also in the same pattern*, Education barrier: Time*

Restriction showed a significant relationship with skill scores. NPs who did not report

time restriction as an Education Barrier had a higher skills score than NPs who did report

this barrier (Appendix E Table 3). Skills scores showed a significant relationship with

continuing education in the past one year as well as with CE hours. NPs who reported 0

to 1 hour for CE hours in depression scored lower than NPs who spent 2-5 hours and NPs

who spent 6 hours or more. In addition, NPs who spent 6 hours or more for depression

CE hours had a higher skills score than NPs who spent 2 to 5 hours. Also, skills scores

showed a significant relationship *with Treatment Barrier: Time Restriction* (Appendix E

Table 4**).** NPs who did not report time restriction as a treatment barrier had a higher

skills score than NPs who did report this barrier (Appendix E Table 4).

Behavior Scores showed a significant relationship with **Continuing Education**;

where NPs who have been participating in continuing education for the past year had a

higher behavior score than NPs who have not. Behavior scores also showed significant

61

relationship with *Treatment Barrier: Time Restriction (Table 13);* NPs who did not report time restriction as a treatment barrier had a higher behavior score than NPs who did report this barrier.

Satisfaction, compensation and adequacy of time scores showed significant relationships with average patients seen daily, where NPs who see an average of 0-10 patients daily had a higher satisfaction, compensation, and adequacy scores than NPs who see an average of 21 or more patients per day (Appendix E Table 1). As discussed above, Satisfaction also showed a significant relationship with CE hours in depression treatment, and *Educational barrier: Time Restriction*.

Hypothesis Testing

In the preliminary analyses the relationship of each demographic with the four outcomes of (1) attitude, (2) skills, (3) behaviors, and (4) satisfaction, compensation, and adequacy were tested. This analysis was conducted to determine which demographic variables were significantly associated with the outcomes and therefore need to be controlled for in the primary analysis. For attitude and skills, continuing education was the only demographic characteristic that needed to be accounted for in the primary analysis. For behavior and satisfaction, compensation, and adequacy, both continuing education and average number of patients seen daily needed to be accounted for in the primary analysis. None of the other demographics were significantly related to the outcomes and therefore were not included in the regression models. Another reason for limiting the number of demographics included in the regression analyses was the sample size. According to G*Power 3.1.7, for a moderate effect size ($f^2 = .15$), power of .80, $\alpha =$

.05, and $N = 121$, the maximum number of predictors was 11. With 8 independent variables (education barriers and treatment barriers) a maximum of 3 demographics could be added. Since the preliminary analyses indicated no more than 2 demographics were needed, no other alternate analysis (i.e. stepwise regression) was conducted.

Hypothesis One

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of attitude scores on the *Primary Care Provider Questionnaire*. As shown in Table 7 (Appendix E), a multiple linear regression was conducted to determine whether demographics, perceived barriers, and professional characteristics were predictive of attitude scores. Results revealed that there were no significant predictors for Attitude scores ($F(9, 111) = 1.30$, $p = .245$, $R^2 = .095$).

Hypothesis Two

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the self-rating of skills in recognizing and treating depression on the Primary Care Provider Questionnaire.

A significant multiple linear regression was found predicting skills scores from perceived barriers, and professional characteristics, $F(9, 111) = 2.47$, $p = .013$, $R^2 = .167$. Examination of the individual predictors revealed that participants who agreed that patient resistance and compliance issues were a barrier to education had increased self-ratings of skills in recognizing and treating depression, Beta = .223, p < .05. Results also revealed that there were no other significant predictors for skills scores (Appendix E, Table 8)

Hypothesis Three

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the rating of the specific behaviors they implement in their depression treatment (treatment and/or referral) as measured by the Primary Care Provider Questionnaire.

As shown in Table 10, a multiple linear regression was conducted to determine whether perceived barriers and professional characteristics were predictive of behavior score. The results revealed a significant overall model, $F(10, 110) = 1.95$, $p = .046$, $R^2 = .150$. Significant predictors of higher behavior scores included indicating that time restrictions are not a treatment barrier (Beta = -.253, $p = .020$) and having participated in continuing education (Beta = -.278, p < .003). The results revealed that there were no other significant predictors for Behavior scores (Table 10).

Table 10

Multiple Linear Regression Analysis for Predicting Behavior from Demographics,

Professional Characteristics, and Perceived Barriers

	Unstandardized				
	B	*SE*	*Beta*	*t*	*p*
Average Patients Seen Daily	.130	.214	.055	.608	.544
Continuing Education	-1.341	.443	-.278	3.025	.003
Edu Barrier1: Time Restriction	.122	.544	.024	.224	.823
Edu Barrier2: Complex Co-Morbid Patient Pop.	.186	.507	.039	.367	.714
Edu Barrier3: Patient Resist Comply Issues	.406	.512	.084	.792	.430
Edu Barrier4: Lack of Refer Options	-.573	.524	-.119	1.094	.276
Treatment Barrier1: Time Restrictions	-1.250	.528	-.253	2.366	.020
Treatment Barrier2: Complex Co-Morbid Patient Pop.	-.057	.496	-.011	.114	.909
Treatment Barrier3: Patient Resist Comply Issues	.581	.543	.113	1.070	.287
Treatment Barrier4: Lack of Refer Options	-.140	.518	-.028	.271	.787

Note. $F (10, 110) = 1.95$, $p = .046$, $R^2 = .150$.

Hypothesis Four

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the ratings of satisfaction, compensation, and adequacy of time to treat depression.

A multiple linear regression was conducted to determine whether perceived barriers and professional characteristics were predictive of Satisfaction, Compensation and Adequacy of time score. The overall model was significant, $F (10, 110) = 2.75$, $p = .005$, $R^2 = .200$). Results revealed that the average number of patients seen daily was a statistically significant predictor of Satisfaction, Compensation and Adequacy of time scores (Beta = -.196, $p = .029$). Participants who see more patients on a daily basis are more likely to have lower Satisfaction, Compensation and Adequacy of time scores. Also, participants who agreed that time restrictions were a barrier to education were significantly more likely to have lower Satisfaction, Compensation and Adequacy of time scores (Beta = -.224 $p = .032$). Results revealed that there were no other significant predictors for Satisfaction, Compensation and Adequacy of time scores (Table 11).

Table 11

Multiple Linear Regression Analysis for Predicting Satisfaction, Compensation, and

Adequacy of time from Demographics, Professional Characteristics, and Perceived

Barriers

| | Unstandardized | | | | |
	B	*SE*	*Beta*	*t*	*p*
Average Patients Seen Daily	-.357	.161	-.196	2.212	.029
Continuing Education	-.263	.335	-.070	.785	.434
Edu Barrier1: Time Restriction	-.895	.411	-.224	2.178	.032
Edu Barrier2: Complex Co-Morbid Patient Pop.	-.479	.383	-.127	1.250	.214
Edu Barrier3: Patient Resist Comply Issues	.436	.387	.116	1.126	.263
Edu Barrier4: Lack of Refer Options	-.166	.396	-.044	.419	.676
Treatment Barrier1: Time Restrictions	-.561	.399	-.146	1.404	.163
Treatment Barrier2: Complex Co-Morbid Patient Pop.	.064	.375	.016	.171	.865
Treatment Barrier3: Patient Resist Comply Issues	.261	.411	.065	.635	.527
Treatment Barrier4: Lack of Refer Options	-.243	.392	-.063	.621	.536

Note. $F (10, 110) = 2.75$, $p = .005$, $R^2 = .200$.

Qualitative

A large portion of any patient care scenario is factored on the dynamics of the medical system and what it can offer in assessing and diagnosing depression or any mental health disorder. In order to capture provider aspects of depression care, an open-ended question requesting the participants' thoughts about caring for depression patients was administered as part of the demographic and practice characteristics analysis. Responses were received from 113 out of 121 participants (93%), which varied in length and detail from several words describing challenges in education and treatment to a paragraph of successes, concerns, and needs for more education. Themes are summarized from responses in Table 12.

Table 12

Open-Ended Question

Participant Comments: *What are your thoughts about caring for depression patients?*

Importance of Care
- It affects other aspects of their care if left untreated.
- Part of necessary care just as diabetes or cardiac disease.
- Just as important as getting glucose (HgbA1C) under control.
- I am very comfortable with depression care as I am board certified in both family practice and psychiatry.
- I don't believe we are doing enough as a healthcare community to ID and treat depression.
- Patients may be effectively treated in the primary care setting in conjunction behavioral medicine and mental health specialists. More time needs to be allotted to treat depression in the primary care setting.

(Continued)

Common problem
  - I see this a lot. About every 5th patient needs care for it.
  - My patients are breast cancer survivors receiving ongoing treatment for new disease or metastatic disease. Depression is very common in this population.
  - Depression in the Incarcerated population is such a common occurrence.

Challenges
  - Challenging to find the time to ask the right questions to assess & diagnose.
  - Vital but difficult to manage.
  - Difficult.
  - Family Practice in the rural area wears many hats. In my rural setting there is a lack of psych specialists and counselors.
  - I use medications, but counseling would be a great addition but is not easily available.
  - Patient consistency and follow-up is a problem.
  - Usually pharmacologic measures have a better effect when coupled with counseling.
  - I do not like caring for mental illness in my practice
  - Depression does take a collaborative effort and honesty on both sides to be effective.
  - My population is illegal immigrants. They have no avenue to enter the healthcare system. Some make too much money and don't qualify for a county clinic card. I treat and do med management for them as they have no other avenues for treatment.
  - I see two levels. The group that presents to primary care than can be managed on monotherapy, and then the more complex like those with recurrent depressive disorder or MDD with psychosis.

Practice boundaries
  - I require a team approach and all patients to be in therapy in order for me to prescribe and manage medications.
  - I only treat mild depression, anything more is referred to a psychiatrist.
  - Frequently missed due to psychosomatic complaints.
  - I need more information on depression care.
  - Primary Care NPs treat many patients with depression on any given day. In general these patients need a longer visit to identify and then manage their needs than patients who have an acute or chronic medical need.
  - Sometimes as an NP we are at odds with the system in providing care to depression patients due to our health care system not taking into account and poor reimbursement given the level of care needed for depression.
  - In primary care, we need more training with the basics of depression.

(Continued)

- Barriers in our system regarding lack of access to mental health professionals to refer to in our area.
- I have an increased awareness of potential liability issues when treating.
- Many times the patient comes in with a pseudo illness and at the conclusion of the visit, they bring up the depression. Limited time requires that one be open to clues early on in history and exam.
- Families and patients have a problem with compliance and follow up is inconsistent. Evidenced based practice plans do not seem available.
- This requires a lot of time to diagnose and treat. I wish I could provide counseling as well.

Summary

Data from demographic and professional characteristics and from the *Primary Care Provider Questionnaire* were analyzed from a mixed methods standpoint. Demographic data helped to define the population of adult and family NPs in Texas (N=121) responding to the study. Urban and rural classifications of the population areas served were based on census definitions. Only 9 participants identified themselves as their primary practice areas being below 2,500 in population while suburban (or urban clusters between 2,500 and 50,000) showed a response of 44 participants. Urban respondents totaled 52 (43%). The majority of respondents were in the 46-55 and 56 and older categories (71%), female (93.4%) and Caucasian (76%). The lead average patients seen daily category of 16-20 (33.9%) and 11-15 (24.8%) were most frequent respondents with 50.4% of NPs responding no to depression continuing education in the past one year. Years of practice as an NP category of 1-5 years was 35.5% of the population with 24% of respondents having 11-15 years of experience.

A series of multiple linear regressions were conducted to determine whether demographics, perceived barriers, and professional characteristics were predictive of the 6 individual items associated with the factor Attitude score. Participants who agreed that time restrictions were a barrier to education were significantly less likely to agree that treating depression was too time-consuming to be practical. Participants who agreed that *patient resistance and compliance issues were a barrier to treatment* were significantly more likely to agree that treating depression was too time-consuming to be practical. No other predictors had a statistically significant relationship with any of the attitude items.

A series of multiple linear regressions were conducted on individual items on the behavior scale to determine whether demographics, perceived barriers, and professional characteristics were predictive of the 7 individual items associated with the factor Behavior score. Participants who agreed that time restrictions were a barrier to treatment were significantly less likely to start patients on antidepressants. Participants who had not participated in continuing education were also significantly less likely to start patients on antidepressant medications. No other predictors had a statistically significant relationship with any of the Behavior items.

Research Question One

Are there any perceived differences in perceptions of treatment for depression based on rural versus urban NPs? Results revealed no significant differences in perceptions of treatment between populations.

Research Question Two

What barriers do Nurse Practitioners report in their treatment of depression in primary care?

Frequencies and percentages were run on the four treatment barriers. *Patient Resistance/ Compliance* in regard to the treatment of depression patients was selected most often (N=81, 66.9%). In addition, *Complexity/Comorbidity of patient population* in a treatment perspective was selected (N=76, 62.8%). Another treatment barrier [*Lack of referral options* (61.2%)] was selected more often than *Time restriction* (39.7%).

Research Question Three

What barriers do Nurse Practitioners report as present in the education of those with depression?

Frequencies and percentages were run on the four education barriers. *Educational Barrier 1: Time Restrictions* in regard to education of patients and lack of time was selected most often (N=81, 66.9%). Other educational barriers (*Complex-Comorbidity of patient population* [52%], *Patient resistance/compliance [*53%] and *Lack of referral* [50%]) were selected by at least half the participants.

Qualitative responses from the questionnaire reveal diverse clinically specific themes from importance of depression care in populations. Reoccurring themes of challenges in treatment of depression patients regarding time, honesty, complexity of patient needs and practice boundaries of needing more education, and balancing systemic insurance issues, reimbursement, and being at odds with putting the patient first. Specific practice populations of the incarcerated, breast cancer, immigrant care, survivors of life

events balanced with resources are discussed. There are many future study implications noted in the richness of this data.

Multiple linear regression was conducted to predict attitude, skill, behavior, and satisfaction scores from the Primary Provider Questionnaire.

Hypothesis One

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of attitude scores on the Primary Care Provider Questionnaire.

A multiple linear regression was conducted to determine whether demographics, perceived barriers, and professional characteristics were predictive of attitude scores. Results revealed that there were no significant predictors for Attitude scores.

Hypothesis Two

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the self-rating of skills in recognizing and treating depression on the Primary Care Provider Questionnaire.

A significant multiple linear regression was found predicting skills scores from perceived barriers, and professional characteristics, F (9, 111) = 2.47, p = .013, R^2 = .167. Examination of the individual predictors revealed that participants who agreed that patient resistance and compliance issues were a barrier to education had increased self-ratings of skills in recognizing and treating depression, Beta = .223, p < .05. There were no other significant predictors for skills scores (Appendix E, Table 8). Results also revealed that there were no other significant predictors for skills scores (Appendix E, Table 8).

Hypothesis Three

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the rating of the specific behaviors they implement in their depression treatment (treatment and/or referral) as measured by the Primary Care Provider Questionnaire.

A multiple linear regression was conducted to determine whether perceived barriers and professional characteristics were predictive of behavior score. The results revealed a significant overall model, $F (10, 110) = 1.95$, $p = .046$, $R^2 = .150$. Significant predictors of higher behavior scores included indicating that time restrictions are not a treatment barrier (Beta = -.253, $p = .020$) and having participated in continuing education (Beta = -.278, p < .003). The results revealed that there were no other significant predictors for Behavior scores (Table 7, Appendix E).

Hypothesis Four

Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the ratings of satisfaction, compensation, and adequacy of time to treat depression.

A multiple linear regression was conducted to determine whether demographics, perceived barriers, and professional characteristics were predictive of Satisfaction, Compensation and Adequacy of time score. Results revealed that the average number of patients seen daily was a statistically significant predictor of Satisfaction, Compensation and Adequacy of time scores. Participants who see more patients on a daily basis are more likely to have lower Satisfaction, Compensation and Adequacy of time scores.

74

Also, participants who agreed that time restrictions were a barrier to education were

significantly more likely to have lower Satisfaction, Compensation and Adequacy of time

scores. Results revealed that there were no other significant predictors for Satisfaction,

Compensation and Adequacy of time scores.

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

This chapter will summarize the findings from this study and discuss the results in light of related research.   Hypotheses and research question results are also discussed, along with implications for health education. Recommendations for future studies and limitations of the present study will also be examined.

Summary

The purpose of this study was to identify and evaluate nurse practitioners' (NP) perceptions and identification of barriers to depression care in primary care settings in Texas. A second purpose was an evaluation of the research questions pertaining to perceptions of treatment of depression based on rural versus urban practice, and an investigation of barriers reported in the education of those with depression.

Description of the Sample

The population under study was evaluated with descriptive statistics in categories of age, gender, ethnicity, population served, ownership of practice, percent insured patients in practice, average number of patients seen daily, continuing education attendance in the past one year in depression care, number of hours of continuing education attended and years as an NP. Data was also collected on perceived barriers to depression care in terms of education of patients and treatment of patients.
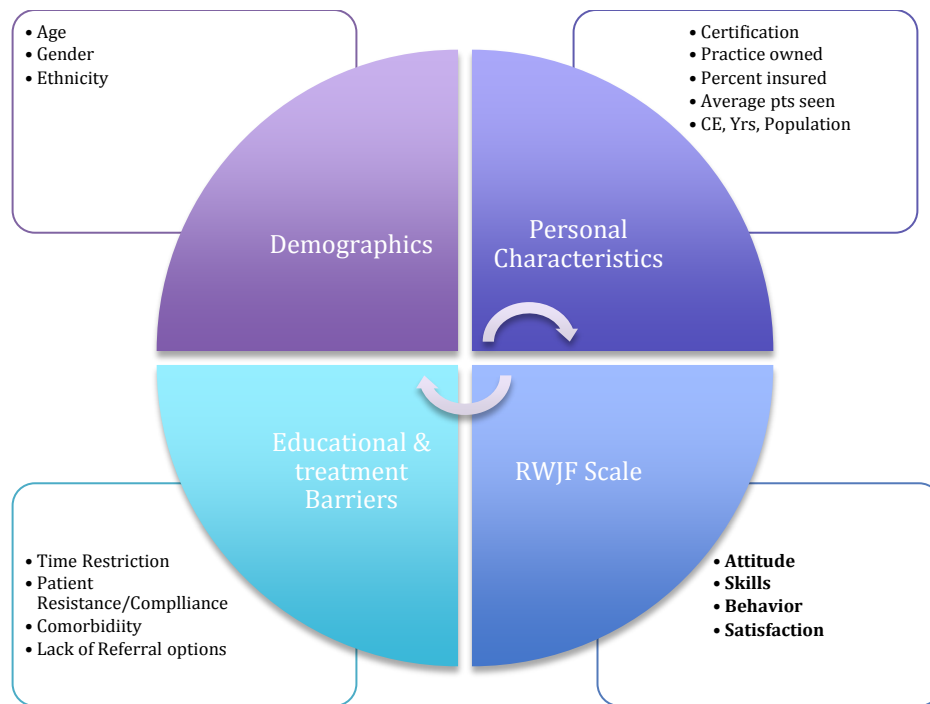
Figure 1. Clarifying relationships of variables

Descriptive Statistics

Participant age varied greatly. A majority of participants were Caucasian, with a small number of Hispanic, African American, and Asian participants. A large majority of participants had family NP certification, with a small number holding adult NP certifications. Further, a large majority of participants worked in urban settings, with only a small number working in rural settings. For purposes of statistical analyses, rural and suburban groups were combined to create more evenly sized groups of rural/suburban and urban practice areas. The sample was evenly split regarding participants who had received continuing education credits in the previous year and those who did not. Lastly,

the largest group of participants had 1 to 5 years of experience as a NP, followed by 11 to 15 years of experience, 16 or more years, and 6 to 10 years of experience.

Inferential Statistics

A significant relationship was found between age and continuing education, with participants aged 56 and over having a higher percentage of CE credit for depression care in the last year. Further, a greater proportion of NPs in each age range reported continuing education for depression care compared to the adjacent younger age range. For instance, NPs between the ages of 46 and 55 years were more likely to attend continuing education courses for depression care than NPs between 36 and 45 years of age. Interestingly, a majority of younger NPs aged 26-35 reported no depression education credits the past five years.

In addition, attendance at continuing education depression courses was related to number of years as an NP. Specifically, a greater proportion of NPs who reported participating in CE courses in depression care during the past year had 16 or more years of experience as an NP when compared to NPs who had not participated in CE courses in depression care. No other published studies on NPs in Texas have addressed this topic. The only requirement currently for choosing topics of continuing education for NPs is that pharmacology hours must be present among a certain percentage. Therefore, it is up to the participant to choose the topics they believe are appropriate to their practice. The first five years of family or adult practice is often consumed with balancing co-morbid illnesses such as hypertension, diabetes, and acute care. This is one possible explanation why an NP in the first five years of practice would not necessarily choose depression

78

continuing education courses for their hours. A major component of skill in assessment and practice development involves exchanging of information in patient education in the provider-patient relationship (Kirchner et al., 2004). Novice NPs may not understand the significance of depression in patient care until later in their practice. Sullivan-Bentz et al. (2010) report that the first years of practice present multiple challenges in role development and medical practice management. A recent graduate in a clinical setting may perceive continuing education in depression as less of an urgent matter than hypertension, cardiovascular or diabetes management skill set. Green, Gorzka, and Kodish (2005) examined courses chosen by NPs at different stages of years of practice. Although they did not examine the topic of depression continuing education in their study, they noted that NPs who had more years of practice had a more diverse representation of CE courses including end of life issues and comorbid management of disease preference in courses.

The number of reported patient encounters per day by respondents in this sample revealed an influence of numbers on attitudes. A greater proportion of NPs who see more than 10 patients a day reported *Educational Barrier: Time Restriction* as a barrier, when compared with NPs who see 0 to 10 patients per day. One could ascertain from this data that seeing fewer patients may allow for communication and freedom to discuss the full spectrum of the patient's health, including mental health. In addition, a greater proportion of NPs who see an average of 16-20 patients per day reported *Patient Resistance/Compliance* issues as a treatment barrier when compared with NPs who see an average of 0-10, 11-15, or 21 or more patients daily. Research examining the physician-

patient relationship reveals a higher number of patients as a barrier to the physician's and other providers' perceptions of time available for patient education (Kirchner et al., 2004; Lovell et al., 2010; Mohr, Benzer & Young, 2013). There must be enough time for communication to understand the patient's perspective of the disease process, meeting the patient's needs, not only the clinical time frame needs (Miller et al., 2011). Only then can the health professional know how best to incorporate education in the clinic setting. Tai-Seale, McGuire and Zhang (2007) cite time and competing health issues as influential in determining patient outcomes, even within a medical home environment.

Ethnicity showed a significant relationship with *Education Barrier: Lack of Referral Options* where a greater proportion of non-Caucasian NPs reported lack of referral options as an educational barrier when compared to Caucasians. In this study, a majority of non-Caucasian NPs worked in Rural or Suburban practice sites that have fewer psychiatric options than an urban setting. A larger percentage of non-Caucasian NPs reported a greater number of insured patients which could relate to location (rural/suburban vs urban).

In addition, age of the NP was found to have a significant relationship with ethnicity; a greater proportion of the Caucasian group was noted in the 56 and older group. This is not vastly different from trends in the past 20 years in nursing. The push for Masters level education in the 1990s showed a predominance of Caucasian attendees (Texas State Board of Nursing, 2013). Data from Texas Department of State Health Services (2006) reveals an increase among Hispanic and African American graduates, but these ethnicities remain underrepresented in advance practice.

Years as NP and percent insured patients. In this sample, NPs with 1 to 5 years of experience and 11 to 15 years of experience reported having more insured patients than NPs with 6 to 10 years of experience or 16 or more years of experience. Studies of the job market 11-15 years ago, showed a noted increase in hiring NPs as cost containment studies in primary care had started to surface both within insured and uninsured locales (O'Brien, 2003). In addition, legislation in 1997 that allowed NPs to have Medicare Provider status impacted hiring and reimbursement (O'Brien, 2003). No specific research has addressed this trend in Texas NPs.

Treatment barrier: patient resistance/compliance. A greater proportion of NPs with more than 25 % insured patients reported *Patient Resistance/Compliance* issues as a treatment barrier than NPs with less than 25% of patients insured. With the increased surveillance of insurance companies and the concept of "pay for performance", there is a focus on health maintenance and compliance on both the provider and patient's part. For example, if a patient's diabetes or other chronic disease markers are out of control, a provider's standing with the insurance company on both patient satisfaction and lab results, compliance with ophthalmology or renal visits is marked. Hence the provider of care is "graded" on these outcome measures that are tied to financial rewards in benchmark improvements (RWJF, 2009) whether or not they have a compliant patient or noncompliant patient. Therefore, an insured patient's documentation and compliance may come under more scrutiny if benchmarks in this patient population are being measured for outcome data within an organization. In other words, as practices are increasingly scrutinized and surveilled by insurance companies, NPs may become more

aware of the need for (and potential lack of) compliance from patients. The evolution of

medical home and pay for performance on outcomes of chronic care have influenced

patient outcomes but also provider workload. Mohr et al. (2013) cited a relationship

between workload and patient care including satisfaction, in which a higher workload

without good teamwork relationships can negatively influence patient satisfaction and

outcomes (Mohr et al., 2013). Loss of joy in the primary care practice has also been cited

as an area of concern influencing patient outcomes and staff satisfaction (Sinsky et al.,

2013).

        Percent insured and educational barriers. Also, percent insured patients

category showed a significant relationship with *Education Barrier: Time Restriction*; a

greater proportion of NPs who reported time restriction as an educational barrier were in

the category of 76-100 percent insured patients (77.6%), when compared to nurses with 0

to 25 % category, 26-50% category and 51-75% category insured patients. In addition, a

greater proportion of NPs who did not report time restriction as an educational barrier had

more patients in the 0 to 25 percent insured patients, when compared to nurses with 26-

50, 51-75, and 76-100 percent insured categories. This study also showed a significant

relationship with *Education Barrier: Lack of Referral Options* and insured patients; a

greater proportion of NPs who reported lack of referral options as an educational barrier

reported 26-50 % of patients as insured. Insured patients have noted difficulty in copays,

availability of specialists in their non-working hours (after 5 pm), and other mental health

stigma related concerns (APA, 2011; NAMI, 2010). Public education and awareness,

knowledge of mental health symptoms, and advocacy are all areas needed to assist insured and uninsured persons.

Relationships Between Independent and Dependent Variables

　　Attitude scores. Attitude scores had a significant relationship with *Education Barrier: Time Restriction.* NPs who did not report time restriction as an education barrier had a higher (positive) attitude score than NPs who reported this barrier. A higher score in the attitude section indicates a more confident and positive attitude toward treatment of depression. Studies in the last two years have examined attitudes of providers and site time allowed per office visit as a factor in having a positive or negative attitude of patient care and achieving patient centered goals (Beverly et al, 2012; Mohr et al., 2013; Sinsky, et al., 2013). Previous research supports the idea that practitioners' interest in depression treatment may affect the outcomes of depression treatment (Kolbasovsky et al., 2005). Specifically, patient treatment outcomes for depression have been found to be positively related to how comfortable a provider is in diagnosing and treating depression. Primary care treatment outcomes may be improved when a provider has an interest in and knowledge base to assess for depression, including the time to treat and discuss the patient's perception of their symptoms (Anthony et al., 2010; Liu et al., 2008).

　　Skill scores. The results from this study revealed a relationship between mental health continuing education and skills scores. Specifically, NPs who had attended continuing education in depression care in the past year had higher skills scores than those who had not completed continuing education credits in depression care. NPs that completed 2 or more hours of continuing education in depression care in the past year

83

had higher skills scores than those who completed less than one hour. In addition, those who completed more than 6 hours of continuing education in depression care had higher skills scores than those who completed 2-5 hours. Again, continuing education hours in depression recognition (even if it is brief program) can influence a provider's ability to improve clinical practice and manage depression symptoms (Upshur & Weinreb, 2008; Wang et al., 2012).

NPs who attended CE courses in depression care during the previous year had higher behavior scores than those who had not. Behavior scores indicate the likelihood of a behavior being performed by a NP in a clinical setting. For example, participants rated the likelihood of engaging in specific clinical behaviors, including "*Start on antidepressant medications*", "*Give supportive counseling yourself*", "*Write diagnosis of depression in chart*", "*Tell patient to contact mental health agency/insurance company for referral*", "*Refer directly to a mental health specialist*", "*Call a consulting psychiatrist*", "*Provide educational materials*", and "*Discuss treatment plan with project or insurance company care manager*". In other words, NPs who had attended CE courses in depression care considered themselves more likely to take action when faced with a patient showing symptoms of depression. Studies that administer continuing education in depression recognition, referral or case management show more positive influences on the ability to recognize and treat patients in the primary care setting (Upshur & Weinreb, 2008; Wang et al., 2012).

Satisfaction. Satisfaction, compensation and adequacy of time showed a significant relationship with *Treatment Barrier: Time Restriction*. Specifically, NPs who

did not report time restriction as a barrier to treatment had a higher satisfaction, compensation and adequacy score than NPs who did report this barrier. This is consistent with the literature in regards to time pressures clinically translating into negative effects on patient care. Job satisfaction and retention of providers will be the focus going forward when the pay for performance and outcome measures are the focus (De Milt, Fitzpatrick, & McNulty, 2011). This landmark study from 2011 sheds light on autonomy and job satisfaction among NPs in the climate of competing demands of healthcare.

Research Question One: **Rural Perceptions**

Are there any perceived differences in perceptions of treatment for depression based on rural versus urban Nurse Practitioners?

A MANOVA was used to observe differences in Attitude score, Skills score, Behavior score, and Satisfaction, Compensation, and Adequacy of time score based on the two categories created for this study of rural-suburban versus urban NPs. This study used the Census Bureau's 3 categories of populations (rural= less than 2500; urban clusters = 2500-50,000; and Urbanized areas greater than 50,000). Due to the small sample size of rural NPs responses (n= 9), they were grouped with urban clusters to equal rural/suburban. Results revealed no significant differences in perceptions of treatment between populations in this sample. It is possible that no significant difference was found due to the small number of participants from a rural area. A larger rural sample might have revealed a lack of providers of mental health and primary care services in rural Texas.

Research Question Two: Treatment Barriers

What barriers do Nurse Practitioners report in their treatment of depression in primary care?

The four treatment barriers of *Time Restriction, Complexity of Patient Population, Patient Resistance-Compliance issues,* and *Lack of Referral Options* were evaluated. *Time restriction* (treatment) includes not having time to discuss treatment options with patients for their conditions. Results from this study revealed that a majority of NPs did not report *Time Restriction* as a treatment barrier. The extent to which NPs believe time restrictions to be a barrier to depression treatment may be due to variations in definitions of depression treatment. For instance, a majority of NPs may not believe that time restrictions are a barrier to depression care because treatment can be accomplished by simply writing a prescription for antidepressants. In contrast, NPs who believe time restrictions to be a barrier may believe that treatment is comprised of more time consuming methods including an assessment of the contributors to depression (e.g., internal and external factors, patient attribution of symptoms, family dynamics).

Complexity. *Complexity of the Patient Population* reflects the need for assessment of co-morbid conditions and their status, both physical and emotional. Although a majority of NPs reported complexity and comorbidity of the patient population as a barrier to depression treatment, over one-third of NPs did not report this as a barrier. Previous research confirms the finding that complexity and comorbidity is a barrier to depression treatment (Coventry et al., 2011; Upshur, 2005). When a patient's physical and emotional health is taxed by the presence of other health issues, such as

diabetes or CHD, a practitioner's interpretation of mental health can become quite complicated. Thus, the more delicate a patient's physical and emotional health, the more complex diagnosis and treatment of depression can become. Because of this, the finding that more than one-third of NPs believed complexity and comorbidity is not a barrier to treatment is surprising. Further investigation into their patient populations would need to be explored. Are these NPs employed by clinics that see primarily acute care visits such as sore throats and coughs? Or are they part of a true primary care that cares for chronic disease and acute episodic care as well?

Patient Resistance/Compliance. *Patient Resistance-Compliance* issues in depression diagnosis and treatment have often been cited in the literature as a barrier to depression care (Beacham et al., 2012; Nutting et al., 2002; Whitebird et al., 2013). This resistance can include a patient's reluctance to accept that depression may be a factor in their wellbeing, as well as a reluctance to continue medication or keep counseling appointments. In this sample, a majority of NPs reported *Patient Resistance and Compliance* issues as a treatment barrier. Previous research supports the notion that patients are often unwilling to seek help or comply with prescribed treatments for depression. Indeed, these two types of resistance are the two most common obstacles as reported by physicians and NPs (Adamek & Kaplan, 2000). *Compliance* may be related to financial concerns (e.g., high deductibles, lack of copays), relational concerns (e.g., sacrificing depression treatment for other family needs that are considered a priority), or personal concerns (e.g., side effects of medication, fears of judgment for having a "mental disorder").

Finally, a majority of NPs reported a *Lack of Referral Options* as a treatment barrier. Indeed, Texas has 184 counties that are considered Mental Health Professional Shortage areas (Texas Department of State Health Services, 2006). When treatment options are limited, emergency rooms are often selected as the primary source of treatment during a behavioral or physical crisis, which can drastically increase the cost of mental health care. Rural areas may be at risk for lack of providers given the challenges of consideration of personal family preferences (preferring urban living locations) and lack of resources for any type of complex patient specialists. Mental health care shortages areas in Texas are extensive given the lack of funding and diverse populations. Local Mental Health Authorities (LMHAs) have staffing and funding challenges as rural areas characteristically can be overloaded with mental health cases without psychiatric care availability (NAMI, 2009). Addressing the continuum or ongoing nature of mental health care follow up requires consistent funding and cooperation among agencies. The Texas 83rd legislature made significant strides to add $350 million in funding to mental health programs in Texas in 2013, however there are still gaps remaining for childless (low income) adults with mental illness due to the decision not to expand Medicaid (Hogg Foundation for Mental Health, 2013). Improved referral sources and mental health education are still needed as part of available Texas programs.

Indeed, previous research supports the finding that a lack of referral resources is a significant barrier to depression treatment (Adamek & Kaplan, 2000; Feth, 2008). Although many shortage areas are rural, there are also segments of urban areas that lack mental health professionals and resources. This is reflected in the findings from this study

where NPs practicing in urban areas (61.5%, n=32) cited lack of referral options as a treatment barrier as often as NPs practicing in rural areas (64.2%, n=34). Urban shortages often reflect lifestyle, work responsibilities or financial choices as listed above. In addition, urban areas often see insurance plan barriers and high deductibles influencing patient choices (Russell, 2010). In addition, segments of urban areas with high poverty and low insured populations may lack mental health care resources. Major projects in Dallas such as the NorthSTAR have increased access to mental health care (Texas Department of State Health Services, 2014), however some surrounding communities are still lacking in resources and in transportation for clients. Lack of referral resources is identified in depression care literature as a major barrier to effective treatment (Adamek & Kaplan, 2000; Feth, 2008).

Research Question Three: Education Barriers

What barriers do Nurse Practitioners report as present in the education of those with depression?

Results from this study revealed that a majority of NPs reported time restriction as a barrier to providing health education to patients with depression. Patient education has long been identified as a key to sustainable behavior change and positive treatment outcomes. Pressures to increase numbers of encounters in a clinical setting greatly reduce the amount of time available for patient education by a provider. A lack of mental health specialists and educators in the primary care environment further limit possibilities to educate patients on mental health. This study echoes previous research citing a lack of

education time as a barrier in the treatment of depression (Connelly et al., 2007; Creamer, 2011; Feth, 2008; Meadows et al., 2011; Osborn et al., 2010).

Results also revealed that slightly over half of NPs reported *Complexity and Comorbidity* of the patient population as an *educational* barrier. Again, this addresses the problem of competing diagnoses such as diabetes, cardiovascular disease, or recent hospitalization that can take priority in a visit. Among individuals with physical illnesses, such as diabetes, asthma, or hypertension, it may be a challenge to separate care for physical and psychological disorders (Beacham et al., 2012; Katon & Unutzer, 2006; Osborn et al., 2010; Upshur, 2005).

Hypothesis Testing

Multiple linear regression was conducted to predict attitude, skill, behavior, and satisfaction scores from the Primary Provider Questionnaire.

Hypothesis One

Ho1: It was hypothesized that demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of attitude scores on the Primary Care Provider Questionnaire.

Results revealed that there were no significant predictors of Attitude scores. Measuring attitudes was expected to be variable as it was examining several attributes of attitudes. For example, within the first section of attitudes, depression care was assessed from both intrinsic and extrinsic factors using Attribution Theory principles of how the NP viewed treatment of depression within the clinic versus referral. In addition, social psychologists report that attitudes have both a cognitive and emotional stance by which

judgments are made. When examining East Coast physicians' attitudes, Hooper et al.

(2011) found a relationship between race, specialty, age, and beliefs about depression

influenced treatment decisions regarding referral versus treatment with medication.

Other research on provider attitudes suggests that barriers such as unease with patients

diagnosed with depression and a lack of referral options often affect outcomes of patient

care (Anthony et al, 2010; Pepper, Nieuwsma, & Thomson, 2007). There were no

significant predictors among demographics, barriers or professional characteristics noted

in this self-measure of attitudes in this population.

Hypothesis Two

Ho2: Demographics, perceived barriers, and professional characteristics will be

neither predictive nor protective of scores on the self-rating of skills in recognizing and

treating depression on the Primary Care Provider Questionnaire.

A multiple linear regression analysis was conducted to examine the predictive

utility of perceived barriers and professional characteristics on skills scores. This model

was found to be significant. The skill section of the tool involved self-evaluation of 7

areas of recognizing depression, treating, and knowing when to consult. Examination of

the individual predictors revealed that NPs who agreed that *Patient Resistance and*

Compliance issues were a barrier to education had increased self-ratings of skills in

recognizing and treating depression. To apply this in a clinical setting, those NPs who

realize that patient involvement and patient acceptance of the disease are important in

educating patients on depression feel more confident in recognizing and treating

depression. Previous research supports the idea that providers who show willingness to

assess depression and provide options for patients with these symptoms often perceive

that they have the skills to manage, recognize, and treat depression (Alexander, 2011;

Anthony et al, 2010; Liu, Lu & Lee, 2008; Wang, Huang, Liu & Lu, 2012).

Hypotheses Three

Ho3: Demographics, perceived barriers, and professional characteristics will be

neither predictive nor protective of scores on the rating of the specific behaviors they

implement in their depression treatment (treatment and/or referral) as measured by the

Primary Care Provider Questionnaire.

A multiple linear regression was conducted to determine whether perceived

barriers and professional characteristics were predictive of behavior score. The results

revealed a significant overall model. Overall, NPs who did not report time restrictions as

a treatment barrier had significantly higher behavior scores. In other words, these NPs

believed they would be more likely to take action when faced with a patient showing

signs of depression. Further, those who had participated in CE courses on depression care

had higher behavior scores. The results revealed that there were no other significant

predictors for Behavior scores. A wide range of research highlights the importance of

increased mental health training for primary care providers in order to positively impact

depression care outcomes (Alexander, 2011; Anthony et al., 2010; Creamer, 2011; Haws,

et al., 2011). Gask (2013) also acknowledges that educators may need to provide more

effective educational programs for family physicians that address their attitudes, skills

and knowledge variances in this field. The barrier of *Time Restriction* influencing a

behavior score may also reflect the use of continuing educational opportunities in

depression care. The higher behavior scores could reflect a more confident behavior in making clinical decisions on depression care as noted by Anthony et al. (2010).

Hypothesis Four

Ho4: Demographics, perceived barriers, and professional characteristics will be neither predictive nor protective of scores on the ratings of satisfaction, compensation, and adequacy of time to treat depression.

A multiple linear regression was conducted to determine whether demographics, perceived barriers, and professional characteristics were predictive of Satisfaction, Compensation and Adequacy of time score. Results revealed that the average number of patients seen daily was a significant predictor of Satisfaction, Compensation and Adequacy of time scores. Participants who see more patients on a daily basis are more likely to have lower *Satisfaction, Compensation and Adequacy* of time scores. Also, participants who agreed that time restrictions were a barrier to education were significantly more likely to have lower *Satisfaction, Compensation and Adequacy of time* scores. This lack of time as a barrier to depression care has been cited in multiple studies as influencing the care of patients with depression (Feth, 2008). The autonomy that is required for decision making in primary care also presents with a need for autonomy over one's schedule of patients. Lower satisfaction in some studies is cited with lower autonomy over scheduling and clinical management issues. Perhaps a future study examining more in depth qualitative themes would reveal specific markers for lower satisfaction and time. Results revealed that there were no other significant predictors for *Satisfaction, Compensation and Adequacy of time* scores.

Qualitative Analysis

An open-ended question was presented to participants in the demographic and professional characteristics portion of the questionnaire (*What are your thoughts in caring for depression patients*?). Rich themes of patient and practice barriers, concerns, and successes were obtained. Participants in general found depression treatment rewarding but with challenges based on their varied clinical settings. Several compared the importance of depression treatment to diabetes and cardiac care outcomes. Rural participants cited lack of counselors and specialists as barriers (Groh, 2013). Qualitative research has addressed the possibility that physical diseases (e.g., chronic heart disease, diabetes) may contribute to depression and that comorbidity of physical and psychological illnesses contributes to the complexity of patient care (Coventry et al., 2011; Sobczak, 2009). Previous research has focused on specific populations, including patients with breast cancer, patients living only in rural areas, incarcerated patients, and immigrant patients. Because this study focused on a variety of practitioners living in different areas of Texas, it offers new insights into practitioners' struggles with depression care. It is important to note that this study's findings of NPs' perceptions of patients with depression, as well as the obstacles to effectively treating patients with depression, echo previous findings (Schumann et al., 2011).

Discussion and Implications for Practice

Results from this study have important implications for the field of health education. Health educators are on the front lines of assessing the public's needs on an individual or in-group basis and are needed to assess gaps in the public's knowledge

about physical and psychological health. The health educator's role would be to identify

those who are showing signs of depression and refer to therapists, health-care providers,

or intake facilities for emergent care. As many authors have concluded, depression

screening and discussions involving mental health do increase the length of the office

visit in primary care (Schmitt et al., 2010). Given the current push for teamwork and

delegation of important educational tasks in primary care, health educators and other

nursing staff are considered to be a valuable resource in the team approach to patient

care. Getting primary care clinic management staff to buy into the role and accept this

investment is key to future involvement of the health education team member.

Acceptance of the gap in patient education is necessary first in order to establish a

treatment system that includes health educators. While medical assistants are heavily

used as support staff in primary care settings, their ability to provide patient education is

limited.

Descriptive Findings

Despite the pressure to treat patients in a timely manner, the education of patients

with depression stands out as a time issue for this sample of NPs. A greater proportion of

NPs who had 76-100% of insured patients reported time restriction as an educational

barrier. Not surprisingly, NPs seeing 1-10 patients each day were less likely to report

time as an educational barrier than NPs seeing more than 10 patients each day. Because

NPs often face pressures to increase the number of patients they see daily, their ability to

effectively educate patients suffers. This issue highlights the need for health educators

and counselors to provide patients with the education they need to appropriately

acknowledge and cope with signs of depression. The greater the number of patients and the greater the complexity due to co-morbid conditions, the greater the need for effective education and referral.

No significant differences were found in perceptions of treatment for depression based on whether NPs were practicing in rural or urban areas. However, it is possible that a lack of rural participants in this sample restricted the ability to detect this effect. Indeed, qualitative comments from NPs suggest that a lack of referral options for counseling and psychiatric consultation services is a considerable barrier in rural areas. Because the number of participants from a rural location was relatively small in this sample ($N = 9$), it is difficult to make inferences regarding rural populations in general due to a lack of statistical power. Because uneven sampling from rural and urban groups is likely to be a common issue in this area of research, a qualitative approach may be more useful for capturing the true essence of NPs perceptions of depression care in rural areas.

NPs' definitions of depression treatment as well as barriers to treatment should be explored in the future. For instance, the extent to which NPs define depression treatment as prescribing medication or interacting with a patient in depth to assess their symptoms may impact NPs perceptions of barriers to treatment. When NPs define treatment as an in-depth assessment of a patient, they may be more likely to report time restrictions as a barrier.

Inferential Statistical Findings

Table 13

Null Hypothesis Summary: Rejected or Not Rejected

Null Hypotheses	Rejected or Fail to Reject
Demographics, perceived barriers, and professional characteristics will not be predictive of scores on:	Fail to Reject
1. Attitude scores on the Primary Care Provider Questionnaire	Null
2. Self-rating of skills in recognizing and treating depression	Reject Null
• Patient Resistance to compliance issues predicted higher self-rating of skills in recognizing and treating depression.	
3. Rating of specific behaviors they implement in depression treatment	Reject Null
• Not reporting time restriction as a treatment barrier predicted higher ratings of specific behaviors implemented in depression treatment.	
4. Ratings of satisfaction, compensation and adequacy of time to treat depression	Reject Null
• Average number of patients seen daily and time restriction as an educational barrier predicted lower satisfaction, compensation and adequacy of time to treat depression.	

Qualitative Findings

A wealth of insight was found in the open-ended question on NPs' thoughts about caring for depression patients. A wide variety of NP concerns, such as caring, not accomplishing enough in time given, and needing more education in depression care, were expressed by the 113 NPs who responded to this question. Overall, four encompassing themes were found, including the importance of depression care, commonality of depression in patients, challenges to treating depression, and practice boundaries (e.g., need for referrals, need for more information on depression care, restrictions from health care system). Future research should seriously consider examining these new areas of concern for NPs as well as continuing qualitative research on NPs' perceptions about depression treatment.

<div align="center">

Limitations

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The primary limitation of this study was the utilization of a small convenience sample. This type of sample limits generalizability to all NPs in Texas or nationwide. Because a convenience sample was used, the presence of a self-selection bias is possible. Specifically, respondents to this survey may have held a prior interest in depression care that would have limited the generalizability of these findings to the general population of NP providers in Texas. The uneven distributions of ethnicity and gender in the current sample (primarily Caucasian females) also pose a limitation on generalizability. Ethnic and gender distributions of respondents may not represent Texas NP perceptions as a whole.

Even in this era of computer literacy, sampling still is difficult with obtaining only postal addresses from professional organizations, mailing a card with a link, and then encouraging the participant to follow through. Many large universities and research institutions are still sending out paper surveys with the option of online or paper returned surveys. When measuring rural practitioners' perceptions on depression care, perhaps a triangulation in methodology is necessary, such as qualitative interviews combined with quantitative measurement. Methods of improving response rates should be considered.

This study also utilized self-report questionnaires for assessing NP perceptions and attitudes about depression treatment. Questionnaires may be prone to bias due to participants' tendencies to be affected by their immediate history with patients more so than their long-term history. For example, an event that occurred clinically with a patient this week may be prominent in one's recall of recent depression care rather than the norm for the past one year. Finally, this study brings up the question of can one measure an attitude with a tool regarding perceptions of depression and its care in a clinical setting? With the qualitative portion of this study noted, further investigation is needed on tool development for the future. Qualitative analysis offers great insight into individual themes of clinical settings.

For the purposes of statistical analysis, rural and suburban NPs were combined (N=53, 43.8%), whereas urban NPs in this sample were the majority as a single group (N=52, 43%). Due to the low response from strictly rural participants (N=9), it is impossible to evaluate adequately the mindset and perceptions of depression treatment based on this small number of participants.

In addition, perceptions based on ethnicity were difficult to ascertain due to the small number of responses from participants who were not Caucasian. However, it is important to note that this study's demographics parallel Texas' distribution of ethnicities in advanced practice.

Missing data was an issue for several of the open-ended items in the demographics questionnaire regarding populations served, continuing education hours, and percent of patients insured. Thus, in the future, it may be advisable to assess this information with closed-ended response options.

While this Primary Provider Questionnaire's use has not been published other than in RWJF Depression Care Initiative, it provided a foundation of assessment of perceptions and attitudes of treating depression patients. While questionnaires and surveys can lead to a sense of a populations' opinions regarding mental health care, it remains a challenge to process and measure attitudes given their dynamic nature.

Implications for Practice

Reoccurring themes in this study include a lack of time for educating patients and the importance of continuing education in depression care for NPs. Additionally, number of patients seen appears to play a role in job satisfaction and retention of employees. Thus, it is likely that support staff will play an increasing role in the health care team going forward with the nation's insurance changes. Accountable Care Organizations are establishing new patient care models that seek to take the sole assessment of the patient off of the physician, PA or NP. These models involve using medical assistants and other clinic nursing staff to help assess, take histories, and provide additional social and

physical care information at the time of the office visit. Health educators are in a position

to greatly contribute to this need with their background in patient education (Haltrop &

Jordan, 2010). Time spent with patients will be evaluated as a team approach rather than

a provider-only approach going forward. This increases the importance of well-trained

and educated staff to identify depression as well as chronic and acute illness symptoms.

Recommendations

Tool development on attitudes towards depression needs further assessment and

development. At the time of this writing, very few tools with established reliability and

validity exist to examine such an important aspect of primary care. The Primary Care

Provider Questionnaire needs further evaluation for items in the sections with varying

reliability. Measuring attitudes presents a challenge due to the nature of how participants

may interpret the attributions of depression markers. Further study on rural/suburban and

urban options for depression barriers is warranted.

Definitions of treatment barriers should be explored in the future. Does treatment

to some NPs mean writing the prescription or does it mean interacting with the patient to

assess, perceive their situation, and choose a therapy modality for depression that is

appropriate? Interpretation of the question may have an effect on NPs not reporting a

time restriction in research question 2 of *what barriers to NPs report in their treatment of*

depression in primary care? If one took depression treatment to mean the time it takes to

write a prescription, then diverse answers on time need to be explored. In addition, if one

is working in a large practice with an expectation of production numbers, are attitudes

towards depression care significantly different from other practice settings? More

research is needed on primary care depression care and the shift towards evidence based medicine. Collaborative care needs further exploration in terms of outcomes in the rural community of primary care.

This study demonstrates the need for clinical staff support and community health educators to be involved in introducing the conversations appropriate for varied audiences on depression signs and symptoms. Health educators can play an important role in a clinical setting in discussing how emotional health supports physical health. With the development of increasing populations to serve in both the care of insured and uninsured patients, a more appropriate question in the future for all providers will be what autonomy is given to a provider over their schedule given the time commitment that depression screening and assessment involves. As physicians and other providers are graded on outcomes of care, the ability to spend time with the patient, and provide teaching specific to their needs sometimes is neglected. With the changing insurance market going forward as the Affordable Care Act is implemented, it is expected that many changes to deductibles, and use of benefits for mental health, will be made. As chronic disease is addressed with outcome measures in markers such as avoidance of hospital readmissions in primary care, addressing the source of underlying depression in chronic illness becomes more important. As office visits increase in complexity and discussions of physical health, mental health screening becomes an important component of patient compliance and involvement in the treatment plan, but also the need for teamwork to accomplish these goals. By increasing awareness of the prevalence of depression, decreasing its stigma, and increasing assessment capabilities of adjunct staff

such as health educators or nurses in general, referral, treatment and improvement in quality of life may be promoted. As the shift in healthcare leans towards primary care raising the bar for positive outcomes for depression patients and being the initial point of contact for many depression patients, NPs and support staff will become a necessary part of the team in medicine.

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APPENDIX A

TWU Institutional Review Board Approval Letter

March 11, 2013

Ms. Denise Bredow
2520 White Oak Lane
Arlington, TX 76012

Dear Ms. Bredow:

Re: *A Study of Depression Care Perceptions in Texas Primary Care Nurse Practitioners (Protocol #: 17287)*

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and was determined to be exempt from further review.

If applicable, agency approval letters must be submitted to the IRB upon receipt PRIOR to any data collection at that agency. Because a signed consent form is not required for exempt studies, the filing of signatures of participants with the TWU IRB is not necessary.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

Sincerely,

Dr. Rhonda Buckley, Chair
Institutional Review Board - Denton

cc.   Dr. Gay James, Department of Health Studies
      Dr. Kristin Wiginton, Department of Health Studies
      Graduate School

STUDY MODIFICATION REQUEST

Principal Investigator: Bredow,   **Protocol #:**   17287   **Campus:**   Denton

Title of Study:
"A Study of Depression Care Perceptions in Texas Primary Care Nurse Practitioners"

Description of Modification Requested:

Additions: Please consider the following modifications: Date change of postcard to April 1, 2013, addition of the word "attitude" to hypothesis 1. Restructure of question #13 on the questionnaire to address both education and treatment , and addition of the word "perceptions" to title on consent form to match title of study.

List of Attachments:

No Attachments

Approved
3/21/13
Rhonda R Buckley

INSTITUTIONAL REVIEW BOARD

940-898-3378 (Denton & Dallas)
713-794-2480 (Houston)

http://www.twu.edu/research/irb.asp

STUDY MODIFICATION REQUEST

Principal Investigator: Bredow , Denise   **Protocol #:** 17287   **Campus:** Denton

Title of Study:
A Study of Depression Care Perceptions in Texas Primary Care Nurse Practitioners

Description of Modification Requested:

Please consider the following modifcations: Invitation postcard format changes.

List of Attachments:

Previously approved invitation

Bredow_inviteIRB.docx
Microsoft Word
Document
96.1 KB

Post card format changes

Denise Post Card
Monday.pdf
Adobe Acrobat Document
44.1 KB

Approved
Brenda P Buckley
4/5/13

123

APPENDIX B

Invitation Postcard

A Study of Depression Care Perceptions in Texas Primary Care Nurse Practitioners

What: I am interested in your perceptions and experiences in treatment of depression in your primary care practice for my PhD Dissertation. Your participation in this survey will help to describe depression treatment in primary care in Texas as well as assist you in improving your own treatment and assessing perceptions in your care of depression patients.

Survey: Please log on to the web address below and take 15-20 minutes to complete the survey.

- **Survey Web Address:**
  www.psychdata.com & enter survey # 153836 in box to the right

- **Or Visit:**
  https://www.psychdata.com/s.asp?SID=153836

Details: *There is a potential risk of loss of confidentiality in all email, downloading, and Internet transactions. Your completion of this survey is your informed consent. The survey is anonymous, and your input will not be connected to your name or personal information. Aggregate data will be reported from the findings without individual identification.*

Contact: Please email me at dbredow@twu.edu if you desire more information or have questions.

Thank you for your participation!

Denise Bredow FNP-BC
TWU Health Studies Graduate Student

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Appendix C

Consent Form

TEXAS WOMAN'S UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH

Title: A Study of Depression Care Perceptions in Texas Primary Care Nurse
          Practitioners

Investigator: Denise Bredow…………………………dbredow@twu.edu 817 360 0416
Advisor: Kristin Wiginton PhD……………… klwiginton@twu.edu 940/898-2860

Explanation and Purpose of the Research

You are being asked to participate in a research study for Denise Bredow's dissertation at
Texas Woman's University. The purpose of this research is to identify and evaluate
Nurse Practitioners' perceptions and identification of barriers to depression care in
primary care settings in Texas. You have been asked to participate in this survey since
you are a Family or Adult Nurse Practitioner in Texas.

Description of Procedures

As a participant in this study you will be asked to spend 15-20 minutes of your time
answering an Internet survey. The researcher will ask you questions regarding your
views of depression care, your practices and your opinions in primary care depression
treatment.

Potential Risks

The researcher will ask you questions about your experience and ideas of depression care
in primary care practice. The researcher will also ask you questions about your practice
of treating depression patients. A possible risk in this study is discomfort with these
questions you are asked. If you become tired or upset you may take breaks as needed.
You may also stop answering questions at any time and end the survey. If you feel you
need to talk to a professional about your discomfort, the researcher will provide you with
a list of resources.

Another risk in this study is loss of confidentiality. Confidentiality will be protected to
the extent that is allowed by law. The results of the study will be reported in scientific
magazines or journals but your name or any other identifying information will not be
included.

*There is a potential risk of loss of confidentiality in all email, downloading, and Internet
transactions*. Your completion of this survey is your informed consent. The survey is

anonymous, and your input will not be connected to your name or personal information. Aggregate data will be reported from the findings without individual identification.

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Page 1 of 2

Participation and Benefits

Your involvement in this study is completely voluntary and you may withdraw from the study at any time. Your participation in this survey will help to describe depression treatment in primary care in Texas as well as assist you in awareness of diagnosis, treatment, and perceptions in your care of depression patients.

Questions Regarding the Study

If you have any questions about the research study you should ask the researchers; their phone numbers are at the top of this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact the Texas Woman's University Office of Research and Sponsored Programs at 940-898-3378 or via e-mail at IRB@twu.edu.

I will consent (link to study)   I will not consent (link to exit)

APPENDIX D

Questionnaires

Copy of A Study of Depression Care Perceptions in Texas Primary Care Nurse Practitioners

*1) What is your age?

[   ]

*2) What is your gender?
- ○ Male
- ○ Female

*3) What is your primary practice zip code?

[   ]

4) What board certification do you currently hold?

- ○ Family
- ○ Adult
- ○ Pediatric

5) What is the approximate population of the community of your practice site?

[   ]

	Physicians	Nurse Practitioners	Corporation	Hospital owned	State or Federally owned
*6) Is your practice owned by:	○	○	○	○	○

*7) What percent of your patients are insured?

[   ]

*8) On the average, how many patients do you see daily?

[   ]

*9) Have you attended continuing education in the past one year that dealt with identifying and treating depression?

- ○ YES
- ○ NO

10) If yes, how many hours were related to depression treatment?

[   ]

*11) Years in practice as a nurse practitioner?

[   ]

12) Overall, what are your thoughts about caring for depression patients?

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┌─────────────────────────────────────────────┐
│                                             │
│                                             │
│                                             │
└─────────────────────────────────────────────┘
(1000 characters remaining)
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*13) What is your ethnicity?

- ○ African American
- ○ Asian American
- ○ Hispanic or Latino
- ○ Caucasian
- ○ Other

Do you identify any of the following concerns or barriers with treatment and education of depression patients? Please check all that apply.

		Time restrictions	Complexity and co-morbidity of patient population	Patient resistance/complia nce issues	Lack of referral options	None
14)	Education	☐	☐	☐	☐	☐
15)	Treatment	☐	☐	☐	☐	☐

Primary Care Provider Questionnaire

Please indicate your opinion with regard to the following statements:

		Strongly disagree	Disagree	Agree	Strongly agree
*16)	Depression, as a patient problem in primary care, is overemphasized.	○	○	○	○
*17)	Depression is one of the most frequent problems I see in my practice.	○	○	○	○
*18)	Treating depression is too time-consuming to be practical in my practice.	○	○	○	○
*19)	Most depressed patients are better off being treated by mental health specialists.	○	○	○	○
*20)	Drug treatment is very effective in treating depression.	○	○	○	○
*21)	Counseling or therapy is very effective in treating depression.	○	○	○	○

Please indicate how certain you feel you can do each of the following:

		Very uncertain	Uncertain	Certain	Very certain
*22)	Recognize depression in most of the patients you see in your office who actually have depression?	○	○	○	○
*23)	Recognize when a patient who is suffering from depression is potentially suicidal.	○	○	○	○
*24)	Effectively treat your depressed patients with medication.	○	○	○	○
*25)	Get timely and helpful advice from a psychiatrist or psychologist in a psychiatric emergency.	○	○	○	○
*26)	Accurately describe to a depressed patient how the mental health triage and treatment system works.	○	○	○	○
*27)	Ensure that a depressed patient who needs it receives timely treatment from a mental health specialist.	○	○	○	○

Please indicate how likely you are to do the following for your depressed (but not suicidal) patients:

	Very unlikely	Unlikely	Likely	Very likely
*28) Start patients on antidepressant medications.	○	○	○	○
*29) Give patient supportive counseling yourself (e.g. advice, reassurance, supportive problem solving).	○	○	○	○
*30) Write the diagnosis of depression in the patient's chart.	○	○	○	○
*31) Tell the patient to contact his or her community mental health agency or insurance company for a referral to a mental health specialist.	○	○	○	○
*32) Refer the patient yourself to a mental health specialist.	○	○	○	○
*33) Call a consulting psychiatrist.	○	○	○	○
*34) Provide educational material to patients and families.	○	○	○	○

Please indicate your opinion with regard to the following statements:

	Strongly disagree	Disagree	Agree	Strongly agree
*35) I find great satisfaction in treating depressed patients.	○	○	○	○
*36) I am fairly compensated for my treatment of depressed patients.	○	○	○	○
*37) I am not constrained by time pressure while I am in with a depressed patient.	○	○	○	○

Continue ONLY when finished. You will be unable to return or change your answers.

APPENDIX E
Data Set Tables

Table 1

Frequencies and Percentages for Ethnicity, Population, Practice, Percent Insured patients, Average patients seen daily, Continuing education, Hours for treatment, Years as nurse practitioner, Edu Barrier1, Edu Barrier2, Edu Barrier3, Edu Barrier4, Treatment Barrier1, Treatment Barrier2, Treatment Barrier3, and Treatment Barrier4 by Age

| | Age | | | | | | | |
| | 26 to 35 | | 36 to 45 | | 46 to 55 | | 56 and older | |
	n	%	n	%	n	%	n	%
Ethnicity								
Non-Caucasian	4	22.2	11	34.4	11	32.4	3	8.1
Caucasian	14	77.8	21	65.6	23	67.6	34	91.9
Population								
Rural Suburban	5	38.5	21	65.6	16	53.3	11	36.7
Urban	8	61.5	11	34.4	14	46.7	19	63.3
Practice Owned								
Physicians	7	38.9	15	46.9	15	44.1	12	32.4
Nurse Practitioners	0	.0	2	6.3	2	5.9	2	5.4
Corporation	4	22.2	4	12.5	6	17.6	9	24.3
Hospital owned	6	33.3	7	21.9	4	11.8	8	21.6
State or Federally owned	1	5.6	4	12.5	7	20.6	6	16.2
Percent Insured Patients								
0 to 25	2	11.8	3	9.4	6	17.6	10	27.0
26 - 50	3	17.6	4	12.5	0	.0	6	16.2
51 - 75	2	11.8	8	25.0	9	26.5	9	24.3
76 - 100	10	58.8	17	53.1	19	55.9	12	32.4
Average Patients Seen Daily								
0 - 10	5	27.8	3	9.4	5	14.7	9	24.3
11 - 15	3	16.7	9	28.1	8	23.5	10	27.0
16 - 20	4	22.2	14	43.8	13	38.2	10	27.0
21 or more	6	33.3	6	18.8	8	23.5	8	21.6
Continuing Education								
Yes	5	27.8	11	34.4	19	55.9	25	67.6
No	13	72.2	21	65.6	15	44.1	12	32.4
Hours for Treatment								
0 to 1 Hour	3	42.9	6	50.0	7	36.8	5	20.0
2 to 5 Hours	4	57.1	6	50.0	8	42.1	11	44.0
6 Hours or More	0	.0	0	.0	4	21.1	9	36.0
Years as Nurse Practitioner								
1 - 5	15	83.3	16	50.0	9	26.5	3	8.1
6 - 10	3	16.7	8	25.0	8	23.5	3	8.1
11 - 15	0	.0	8	25.0	11	32.4	10	27.0
16 or more	0	.0	0	.0	6	17.6	21	56.8
Edu Barrier1: Time Restriction								
Time restrictions - UnChecked	6	33.3	7	21.9	14	41.2	13	35.1

Time restrictions - Checked	12	66.7	25	78.1	20	58.8	24	64.9
Edu Barrier2: Complex Co-Morbid Patient Pop.								
Complexity and co-morbidity of patient population - UnChecked	9	50.0	16	50.0	16	47.1	17	45.9
Complexity and co-morbidity of patient population - Checked	9	50.0	16	50.0	18	52.9	20	54.1
Edu Barrier3: Patient Resist Comply Issues								
Patient resistance/compliance issues - UnChecked	10	55.6	14	43.8	15	44.1	18	48.6
Patient resistance/compliance issues - Checked	8	44.4	18	56.3	19	55.9	19	51.4
Edu Barrier4: Lack of Refer Options								
Lack of referral options - UnChecked	9	50.0	14	43.8	17	50.0	21	56.8
Lack of referral options - Checked	9	50.0	18	56.3	17	50.0	16	43.2
Treatment Barrier1: Time Restrictions								
Time restrictions - UnChecked	12	66.7	17	53.1	21	61.8	23	62.2
Time restrictions - Checked	6	33.3	15	46.9	13	38.2	14	37.8
Treatment Barrier2: Complex Co-Morbid Patient Pop.								
Complexity and co-morbidity of patient population - UnChecked	2	11.1	16	50.0	16	47.1	11	29.7
Complexity and co-morbidity of patient population - Checked	16	88.9	16	50.0	18	52.9	26	70.3
Treatment Barrier3: Patient Resist Comply Issues								
Patient resistance/compliance issues - UnChecked	7	38.9	4	12.5	16	47.1	13	35.1
Patient resistance/compliance issues - Checked	11	61.1	28	87.5	18	52.9	24	64.9
Treatment Barrier4: Lack of Refer Options								
Lack of referral options - UnChecked	6	33.3	11	34.4	14	41.2	16	43.2
Lack of referral options - Checked	12	66.7	21	65.6	20	58.8	21	56.8

Note. * $p <.05$; ** $p <.001$. Ethnicity $\chi2$ (3) = 8.35, $p = .039$, Cramer's $V = .263$. Population $\chi2$ (3) = 6.08, $p = .108$, Cramer's $V = .241$. Practice Owned $\chi2$ (12) = 8.21, $p = .769$, Cramer's $V = .150$. Percent Insured Patients $\chi2$ (9) = 12.98, $p = .164$, Cramer's $V = .190$. Average Patients Seen Daily $\chi2$ (9) = 7.45, $p = .591$, Cramer's $V = .143$. Continuing Education $\chi2$ (3) = 11.71, $p = .008$, Cramer's $V = .311$. Hours for Treatment $\chi2$ (6) = 9.70, $p = .138$, Cramer's $V = .277$. Years as Nurse Practitioner $\chi2$ (9) = 62.15, $p < .001$, Cramer's $V = .414$. Edu Barrier1 $\chi2$ (3) = 2.89, $p = .408$, Cramer's $V = .155$. Edu Barrier2 $\chi2$ (3) = .16, $p = .985$, Cramer's $V = .036$. Edu Barrier3 $\chi2$ (3) = .82, $p = .845$, Cramer's $V = .082$. Edu Barrier4 $\chi2$ (3) = 1.17, $p = .761$, Cramer's $V = .098$. Treatment Barrier1 $\chi2$ (3) = 1.08, $p = .783$, Cramer's $V = .094$. Treatment Barrier2 $\chi2$ (3) = 9.79, $p = .020$, Cramer's $V = .284$. Treatment Barrier3 $\chi2$ (3) = 9.47, $p = .024$, Cramer's $V = .280$. Treatment Barrier4 $\chi2$ (3) = .88, $p = .831$, Cramer's $V = .085$.

Table 2

Summary of Multiple Regression Analyses for Individual Items on Attitude Scale from Demographics, Professional Characteristics, and Perceived Barriers

	Depressions is overemphasized Beta	Depression is one of the most frequent problems Beta	Treating depression is too time-consuming Beta	Most depressed patients are better off Beta	Drug treatment is very effective Beta	Counseling or therapy is very effective Beta
Average Patients Seen Daily	.069	.024	-.070	-.015	.025	.186
Continuing Education	.046	-.242**	-.050	-.148	.061	-.024
Edu Barrier1: Time Restriction	-.136	-.073	-.209*	-.196	.005	.079
Edu Barrier2: Complex Co-Morbid Patient Pop.	.247*	.192	-.171	-.154	.034	.074
Edu Barrier3: Patient Resist Comply Issues	.114	.133	-.015	.021	.051	.188
Edu Barrier4: Lack of Refer Options	.137	-.104	-.190	-.160	-.054	-.137
Treatment Barrier1: Time Restrictions	.030	-.091	-.177	.007	-.078	-.146
Treatment Barrier2: Complex Co-Morbid Patient Pop.	-.153	.024	.033	-.066	.003	-.018
Treatment Barrier3: Patient Resist Comply Issues	-.086	.022	.214*	.128	-.043	-.202
Treatment Barrier4: Lack of Refer Options	-.008	-.097	.052	.202	-.016	.089

Note. $* p < .05; ** p < .001$. Model Depression is overemphasized: $F(10, 110) = 1.39, p = .195, R^2 = .112$. Model Depression is one of the most frequent problems: $F(10, 110) = 1.76, p = .076, R^2 = .138$. Model Treating depression is too time-consuming: $F(10, 110) = 2.69, p = .005, R^2 = .197$. Model Most depressed patients are better off: $F(10, 110) = 1.58, p = .123, R^2 = .125$. Model Drug treatment is very effective: $F(10, 110) = .15, p = .999, R^2 = .013$. Model Counseling or therapy is very effective: $F(10, 110) = 1.04, p = .415, R^2 = .086$.

Table 3

Means and Standard Deviations for Attitude score, Skills score, Behavior score, Satisfaction, Compensation and Adequacy of time score by Edu Barrier1

	n	M	SD	F	p
Attitude score				5.40	.022
Time restrictions - UnChecked	40	18.83	1.89		
Time restrictions - Checked	81	17.83	2.37		
Skills score				5.34	.023
Time restrictions - UnChecked	40	16.58	2.52		
Time restrictions - Checked	81	15.28	3.05		
Behavior score				.22	.637
Time restrictions - UnChecked	40	21.00	2.16		
Time restrictions - Checked	81	20.78	2.55		
Satisfaction, Compensation, and Adequacy of time score				14.64	.000
Time restrictions - UnChecked	40	8.20	1.88		
Time restrictions - Checked	81	6.88	1.74		

Note. Multivariate $F (4, 116) = 4.40$, $p = .002$, partial $\eta^2 = .132$. Means with different superscripts differ significantly, $p < .05$.

Table 4

Means and Standard Deviations for Attitude score, Skills score, Behavior score, Satisfaction, Compensation and Adequacy of time score by Treatment Barrier1

	n	M	SD	F	p
Attitude score				3.50	.064
Time restrictions - UnChecked	73	18.47	2.12		
Time restrictions - Checked	48	17.69	2.42		
Skills score				4.79	.031
Time restrictions - UnChecked	73	16.18	2.63		
Time restrictions - Checked	48	15.00	3.27		
Behavior score				4.70	.032
Time restrictions - UnChecked	73	21.23	2.31		
Time restrictions - Checked	48	20.27	2.50		
Satisfaction, Compensation, and Adequacy of time score				8.08	.005
Time restrictions - UnChecked	73	7.70	1.82		
Time restrictions - Checked	48	6.73	1.87		

Note. Multivariate F (4, 116) = 3.10, p = .018, partial η^2 = .096. Means with different superscripts differ significantly, p < .05.

Table 5

Means and Standard Deviations for Attitude score, Skills score, Behavior score, Satisfaction, Compensation and Adequacy of time score by Continuing education

	N	M	SD	F	p
Attitude score				1.58	.212
Yes	60	18.42	2.41		
No	61	17.90	2.10		
Skills score				4.37	.039
Yes	60	16.27	3.12		
No	61	15.16	2.67		
Behavior score				9.61	.002
Yes	60	21.52	2.20		
No	61	20.20	2.48		
Satisfaction, Compensation, and Adequacy of time score				.96	.330
Yes	60	7.48	2.12		
No	61	7.15	1.63		

Note. Multivariate $F(4, 116) = 2.55$, $p = .043$, partial $\eta^2 = .081$. Means with different superscripts differ significantly, $p < .05$.

Table 6

Means and Standard Deviations for Attitude score, Skills score, Behavior score,
Satisfaction, Compensation and Adequacy of time score by Average patients seen daily

	N	M	SD	F	p
Attitude score				1.02	.389
0 - 10	22	18.09	1.87		
11 - 15	30	17.93	2.05		
16 - 20	41	18.63	2.56		
21 or more	28	17.75	2.29		
Skills score				.49	.691
0 - 10	22	16.09	2.58		
11 - 15	30	16.00	3.53		
16 - 20	41	15.63	3.19		
21 or more	28	15.21	2.08		
Behavior score				2.80	.043
0 - 10	22	20.00	2.09		
11 - 15	30	21.10	2.25		
16 - 20	41	21.54	2.50		
21 or more	28	20.25	2.50		
Satisfaction, Compensation, and Adequacy of time score				2.83	.042
0 - 10	22	8.14	1.55		
11 - 15	30	7.37	1.61		
16 - 20	41	7.32	1.98		
21 or more	28	6.61	2.08		

Note. Multivariate $F(12, 301.907) = 1.77$, $p = .052$, partial $\eta^2 = .058$. Means with different superscripts differ significantly, $p < .05$.

Table 7 Hypothesis I

Multiple Linear Regression Analysis for Predicting Attitude from Demographics, Professional Characteristics, and Perceived Barriers

| | Unstandardized | | | | |
	B	*SE*	*Beta*	*t*	*p*
Continuing Education	-.574	.425	-.127	1.351	.179
Edu Barrier1: Time Restriction	-.817	.511	-.171	1.598	.113
Edu Barrier2: Complex Co-Morbid Patient Pop.	.202	.483	.045	.418	.677
Edu Barrier3: Patient Resist Comply Issues	.599	.490	.133	1.223	.224
Edu Barrier4: Lack of Refer Options	-.716	.502	-.159	1.427	.156
Treatment Barrier1: Time Restrictions	-.602	.506	-.131	1.190	.237
Treatment Barrier2: Complex Co-Morbid Patient Pop.	-.245	.476	-.053	.515	.608
Treatment Barrier3: Patient Resist Comply Issues	.209	.519	.044	.403	.688
Treatment Barrier4: Lack of Refer Options	.320	.497	.069	.644	.521

Note. $F(9, 111) = 1.30$, $p = .245$, $R^2 = .095$.

Table 8 Hypothesis 2

Multiple Linear Regression Analysis for Predicting Skills from Demographics, Professional Characteristics, and Perceived Barriers

| | Unstandardized | | | | |
	B	SE	Beta	t	p
Continuing Education	-.968	.530	-.165	1.827	.070
Edu Barrier1: Time Restriction	-.731	.638	-.117	1.145	.255
Edu Barrier2: Complex Co-Morbid Patient Pop.	.440	.603	.075	.730	.467
Edu Barrier3: Patient Resist Comply Issues	1.308	.611	.223	2.139	.035
Edu Barrier4: Lack of Refer Options	-1.003	.626	-.171	1.602	.112
Treatment Barrier1: Time Restrictions	-1.159	.632	-.193	1.833	.069
Treatment Barrier2: Complex Co-Morbid Patient Pop.	-.359	.594	-.059	.604	.547
Treatment Barrier3: Patient Resist Comply Issues	-.271	.648	-.044	.418	.677
Treatment Barrier4: Lack of Refer Options	-.556	.620	-.092	.896	.372

Note. $F(9, 111) = 2.47$, $p = .013$, $R^2 = .167$.