ADOLESCENT DEPRESSION SCREENING PRACTICES AMONG TEXAS PEDIATRIC AND FAMILY NURSE PRACTITIONERS

by

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This study is dedicated to family and pediatric nurse practitioners who took time out of their busy schedules to provide the information found in this study. I am thankful to them for their interest and assistance in this study. Also, this effort is dedicated to adolescents, who are the hope of our future. May they always have good support systems. May they be granted good health care and protective families that will enable them to be happy and productive members of our society.

"Healing is a matter of time, but it is sometimes also a matter of opportunity. Make a habit of two things: to help; or at least to do no harm."

- Hippocrates

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ABSTRACT

ADOLESCENT DEPRESSION SCREENING PRACTICES

AMONG TEXAS PEDIATRIC AND FAMILY

NURSE PRACTITIONERS

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Depression is a common mental health concern for adolescents that, if not treated, may lead to lifelong consequences. Yet, many in this population are not diagnosed and thus remain untreated. Advanced practice nurse practitioners, in their places of employment, have opportunities to interact with adolescents. They are skilled and trained in health promotion and disease prevention practices. No studies were found that examined screening practices for adolescent depression of nurse practitioners, factors affecting their screening practices, and their management of adolescents whom they determine are depressed. The purpose of this study was 1) to describe the background factors of age and years in practice, attitudes, behavioral beliefs, normative beliefs and control factors that lead to the behavior of screening adolescents for depression by family and pediatric nurse practitioners, and 2) to correlate these constructs with one another and the behavior of adolescent screening and 3) to describe the screening instruments they use and what they do with positive depression screening. This study was guided by the constructs of the Theory of Reasoned Actions.

The study participants were pediatric and family nurse practitioners (*n*=166) who practice in the state of Texas. The nurse practitioners ranged in age from 27 to 68 years of age (*M* = 45.8, *SD*=10.9). Length of time in practice as nurse practitioners ranged from 3 months to 33 years (*M*=9.5*, SD*=7.7). The method was a researcher created survey that was administered on- line through SurveyMonkey. A 2.4% response rate was obtained. The nurse practitioners were practicing across the state of Texas in 75 different counties in both urban and rural areas of the state. All geographic regions of the state of Texas were represented.

Results showed that the majority of family and pediatric nurse practitioners screen for depression, but fail to screen at every type of visit they have with adolescents. Only during 48% of their contacts with adolescents were they screening for depression, indicating that perhaps they are missing some opportunities to screen adolescents for depression. The conclusions of this study supported the Theory of Reasoned Action. The constructs of the study were moderately to strongly associated with the behavior of screening, and mildly to strongly correlated with one another. Possible barriers to screening included lack of training in screening and adolescent depression issues, insurances that do not reimburse for screening adolescents, and feeling incompetent to screen adolescents for depression

Participants most often selected the Home, Education, Environment, Activities, Diet, Drug Use, Depression, and Sexuality, Spirituality and Safety (HEADDSS) to guide their screening of adolescents for depression. Though not a specific screening instrument, the HEADDSS mnemonic is a broad psychosocial inventory often used to helped guide the clinician interview of adolescents. The Patient Health Questionnaire-9 (PHQ-9) and the Beck Depression Inventory (BDI) were the most frequently selected screening instruments chosen. Many reported they also use a subjective, likert scale assessment, known as Subjective Units of Distress (SUD), that can be compared from visit to visit to monitor patient progress. The majority of these nurse practitioners do not prescribe antidepressants, but most of them refer

adolescents for psychotherapy and specialty psychiatric care providers when a positive depression screen is found.

This study was limited by the small sample size and the homogeneity of the population. The survey was created by the researcher and had a high content validity index but low internal consistency reliability alpha on each of the subscales. This study is the first to look at depression screening practices of nurse practitioners and a replication is recommended following further development and improved psychometric characteristics of the instrument.

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CHAPTER 1

ADOLESCENT DEPRESSION SCREENING PRACTICES IN TEXAS

1.1 Introduction

Depression is a common occurrence in adolescents which should be detectable and treatable due to advances in the state of the science related to this diagnosis. Primary care providers who have access to the care of adolescents can readily screen for depression in this age group, though it seems doubtful that this occurs as frequently as needed for many cases of depression go undiagnosed and thus untreated.

Today, health care professionals recognize depression as a true, brain based phenomenon often linked to sociological and life stressor events (Baare et al., 2007; Dedovic et al., 2010; Eshbaugh, 2007; Graybiel, 2005; Harvey, Pruessner, Czechowska, & Lepage, 2007). Along with this recognition of the pathology of depression has come a clearer understanding of the symptoms of depression in this population (Greenberg, 2009). Health care professionals have access to screening instruments with good validity and reliability that can diagnose depression in a dependable manner (Rey, Grayson, Majarrad, & Walter, 2002). Nurse practitioners are in key positions to address the possibility of depression among adolescent patients and clinical practice guidelines recommend that health care professionals screen adolescents for depression (Kaye et al., 2009).

Researchers recommended to the United States Preventative Task Force that adolescents from 12-18 years old should be screened for depression (Williams, O'Connor, Eder, & Whitlock, 2009). In addition, reports developed by members of the American Medical Association, the American Academy of Pediatricians, the National Research Council and the Institute of Medicine, and the National Association of Pediatric Nurses and Nurse Practitioners

encourage screening of children and adolescents for depression at regular intervals (AmericanAcademy of Pediatricians [AAP], 2002; American Medical Association [AMA],1997; National Association of Pediatric Nurses and Practitioners [NAPNAP], 2011; National Research Council and the Institute of Medicine [NAS-IOM], 2009). However, Jonas (2011) reported findings of the Healthy People, 2010 initiative that only 2.1% of primary care providers screened for adolescent depression in 2005-2007. Thus, many adolescents with depression are never screened, and, as a result, never diagnosed.

Screening for adolescent depression is an important step in diagnosing and treating depression in this population. Little research exists on the factors that affect screening of adolescents for depression. Without this knowledge, optimal strategies cannot be developed to translate recommendations to screen adolescents into the daily practice of health care professionals.

1.2 Background and Significance

Depression is one of the most common mental illnesses experienced in adolescence. Researchers have reported a lifetime prevalence approaching 20% and incidence rate of 8.3% among adolescents in the United States (Cronholm et al, 2010; Merinkangas, et al., 2010). In 2009, two million U.S. youth from the age of 12 to 17 years reported having had a major depressive episode within the last year (Substance Abuse and Mental Health Service Administration [SAMHSA], 2010). Screening for depression among adolescents is low (Jonas, 2011) and may reduce the opportunity of making a diagnosis of depression and beginning treatment for this concern.

Merikangas and colleagues (2010) conducted The National Comorbidity Survey – Adolescent Supplement (NCS-A) and determined that 11.2 % of 13 to 18 year olds in the United States had depression at some point during their lives. Additionally, 3.3 % of 13 to 18 year olds have experienced a seriously debilitating depressive disorder. Approximately 4 % of 13 year olds experience depression, and this rate increases to 11.6% among 16 year olds, indicating older

youth are more likely to have depression. In addition, these researchers found that adolescent girls are more likely to have depression than boys.

Researchers have found that treatment for depression in adolescents is difficult with variable recovery, remission and often recurrence of depression (Birmaher et al., 2000; Curry et al., 2011), although most adolescents respond to treatment within nine months (Kennard et al., 2009). A 65% to 71% recovery rate, defined as an achievement of remission which is sustained by a well period of at least four months, often occurs at 36 weeks of treatment, whether by use of medication, psychotherapy or a combination of both following the onset of a depressive episode in adolescents. In addition, response to treatment is improved in those adolescents whose major depressive episode has been less than 40 weeks in duration (Curry et al., 2006). Those adolescents who are younger at the time of their first episode of depression have been found to have a longer period of depression before remission, or a return to symptom free or near symptom free status occurs. Females were also found to have a reduced time to recurrence of symptoms (Gollan & Pane, 2006).

If an adolescent with depression is not diagnosed and treated, many short term and long term, serious consequences can occur. The most worrisome concern in adolescents is the possibility of suicide which ranks as the third leading cause of death in this population (Asarnow, Jaycox, & Anderson, 2002; Gardner et al., 2010; Hallfors et al., 2006; Merikangas et al, 2010). Depressed teens have poor classroom performance, as they are unable to attend to classroom content; they have problems with focus and are unable to concentrate (Burns et al., 2004; Fletcher, 2009). They have difficulty with relationships with parents and peers, and decreased interest and involvement in daily activities and responsibilities (Eshbaugh, 2007; Field, Diego & Sanders, 2002; Overbeek, 2006; Sheeber, Davis, Leve, Hops & Tildesley, 2007; Stice, Ragan, & Randall, 2004).

As a consequence of depression, adolescents frequently suffer from symptoms of illness, such as stomach aches and headaches, which affects their involvement in various activities

(Burns et al., 2004; Harper, Marks, & Nelson, 2002). Also, researchers have found a link between immune system dysregulation and major depressive disorders in adolescents (Gabbay et al., 2009). If depression is untreated, the ensuing problems may become chronic and serious. In the long term, they may be unable to form relationships, learn academic content in the classroom, and develop important life skills outside the classroom. They may have more episodes of interpersonal conflict compared with those who have depression and have been successfully treated (Jacobson & Mufson, 2010). If untreated depression continues, they may never be able to positively participate in society, due to the incapacitation of depression (Overbeek, 2006). As adults, these teenagers may have lifelong unemployment or underemployment concerns, decreased ability to support themselves, and increased involvement in crime and legal problems that complicate their adult lives. If they become parents, their depression may affect their ability to parent and the cycle of their problems is often repeated in their children (Donahue et al., 2010; Hughes & Gullone, 2008; Spence, Najman, Bor, O'Callaghan, & Williams, 2002; Treutler, & Epkins, 2003). In fact, depression is due in part to environmental processes independent of inherited effects. Specifically, girls may be more sensitive to the negative effects of maternal depression than boys through environmental processes (Lewis, Rice, Harold, Collishaw, & Thapar, 2011).

When depression occurs, the behavior of adolescents is erratic as they are unable to use good judgment and make clear decisions. This is further complicated as adolescents are developmentally more impulsive due to their yet-to-be developed pre-frontal cortex which helps them to make decisions and wise judgments (Yurgelun-Todd, 2010) . Thus, they may successfully complete a suicide attempt or engage in other risk taking behaviors such as alcohol and drug abuse (Chinet, et al., 2006; Harper, Marks, & Nelson, 2002; Taylor, 2011), promiscuous sexual behavior (Seth, et al., 2011; Shrier, Harris, & Beardslee, 2002; Voisin, Harris, Crosby, Salazar, & diClemente, 2011), cigarette smoking (Bonin, 2011; Pullen, Modrein-McCarthy, & Graf, 2000), committing acts of violence against others (Burns, et al., 2004; Harper, et al., 2002),

and being involved in gangs(Moore, 2002; Shafii, 2003). They are more likely to succumb to unhealthy peer pressure due to their impulsivity (Agrawal, Lyndsey, Bucholz, Madden & Heath, 2007).

While primary care physicians are a group who care for adolescents and may have opportunities to screen for depression among this population, it is beyond the scope of this study to include all health care providers. Thus, only advanced practice registered nurses who practice as Pediatric Nurse Practitioners (PNPs) and Family Nurse Practitioners (FNPs) will be assessed in this study. Advanced Practice Registered Nurses (APRNs) may be the logical professional health care provider to screen adolescents for depression for many reasons. Naylor & Kurtzman (2011) documented a current decline in other types of primary healthcare providers. Researchers support the overall competency and affordability of APRNs and note that nurse practitioners are the single largest group of healthcare providers in the United States. They are also the initial point of patient contact in many settings (Naylor & Kurtzman, 2011).

Advanced Practice Registered Nurses are certified by professional or specialty organizations and are licensed to deliver care consistent with their areas of expertise and the laws that govern nursing scope of practice within each state. APRNs specialize in health promotion and disease prevention and their curriculums strongly address these issues. About 70-80% of APRNs work in primary care (The Robert Graham Center, 2005). They deliver care to private and public practices and work in medical and urgent care clinics and emergency rooms, clinics, retail centers, schools, and hospitals. All of these are places where one would expect adolescents to go for their health care. The role of APRNs in providing care for specific mental health care needs of the adolescent is supported by their professional associations, such as the National Association of Pediatric Nurses and Practitioners and their recent Keep Yourself Safe initiative (NAPNAP, 2011). Yet, it remains unknown how primary care nurse practitioners have translated these recommendations into action, whether they are screening adolescents for

depression and if they are able to offer follow up services in their practices for a potential diagnosis of depression in this age group.

1.3 Framework

The Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 2010) will guide this study in understanding how primary care advanced practice nurses decide to screen for depression in adolescents. Figure 1.1 provides a model of the constructs that will be used in this study.

In the Theory of Reasoned Action, Fishbein and Ajzen (2010) define the constructs that they found to predict behavior. The intention to perform a behavior and the perception of control are formed by the attitudes and beliefs a person has toward the behavior. Attitudes and beliefs may be influenced by various background factors such as age, education, religion, gender, or ethnicity. These background factors have different degrees of influence in forming the beliefs one has about the behavior. Attitude is one of the key factors in the individual's intention toward performing the behavior and is defined as one's negative or positive view of the behavior. Perceived behavioral control, in the center of the model, is represented as occurring at the juxtaposition of the internal and external control factors. Perceived behavioral control consists of internal factors, such as skills, as well as external factors, such as other people or events, that influence the ability to perform the behavior along with individuals' beliefs that they can overcome any obstacles related to the behavior. Perceived behavioral control is mediated by actual behavioral control, which is the extent to which a person has the skills, resources and other prerequisites to perform the behavior. The background factors affect the internal and external factors which in turn shape perceived behavioral control (Ajzen, & Fisbein, 1980; Fishbein & Ajzen, 2010).

Perceived norms related to a behavior are shaped by normative beliefs. Normative beliefs are those that people form about important other individuals' or groups' views of the behavior and whether they might approve or disapprove of performing the behavior. Included in normative beliefs are one's perceptions about whether these important others perform or do not

perform the behavior. The normative beliefs lead to a perceived norm that develops into a perceived social pressure to engage or not to engage in a behavior (Ajzen & Fisbein, 1980).

As the literature does not describe the factors influencing adolescent depression screening practices in FNPs and PNPs, this proposed study will assess background factors, attitudes, perceived norms, perceived control, and actual control as constructs from TRA that may affect the adolescent depression screening behaviors (Figure 1.1).

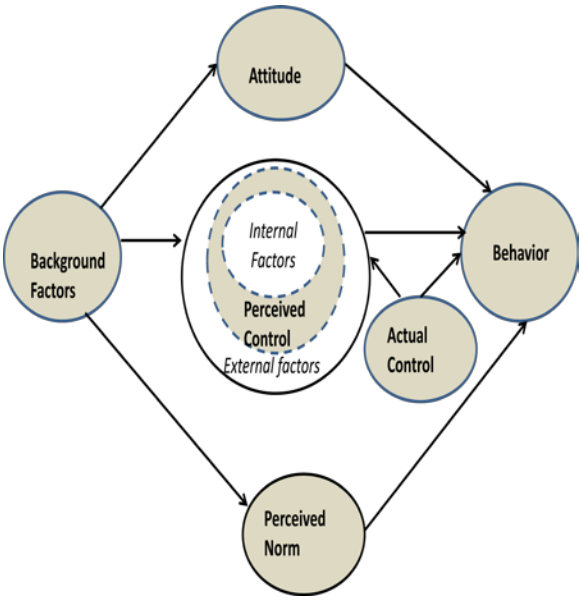

Figure 1.1 Model of Study

In this study, background factors include age, profession, site of employment and the type of service the APRN provides, the percentage of time employed, and the amount of time in the profession. Background factors also include awareness of factors present in the life of the adolescent that prompt screening of adolescents for depression Attitudes include the beliefs APRNs hold regarding the behavior of screening adolescents for depression, whether screening is a part of their role, and the issues of whether patients are accepting of the diagnosis and treatment considerations. Perceived control describes internal issues such as belief in competence to screen. External issues of perceived control include whether the job setting is conducive to screening adolescents, whether enough time to screen occurs and whether

insurances reimburse for screening. External issues of perceived control also include the adolescents' presenting problem being viewed as a distracter to screening and initiation of treatment for depression. Perceived norms consider whether APRNs believed their colleagues and peers screen adolescents for depression, whether their administration supports screening adolescents, and whether they believe their professional organizations recommend screening adolescents for depression. Actual control issues may include lack of available instruments to screen adolescents, lack of instruments that are sensitive to the population of adolescents seen by the APRN, a lack of treatment and referral sources to treat depression in adolescents and a lack of training in how to screen adolescents for depression.

Many empirical studies have evaluated the use of The Theory of Reasoned Action and found it is able to explain and predict behavior (Anderson & Lavallee, 2008; Campbell, 2009; Cornelius, LeGrand & Jemmot, 2008; Ross, Kohler, Grimley, & Anderson-Lewis, 2007; Sable, Schwartz, Kelly, Lisbon, & Hall, 2006; Zamboanga, 2009). Cooke and French (2008) reviewed 33 studies that examined the intentions of adults to attend screening programs, such as breast screening or colonoscopy screening, using the Theory of Reasoned Action and the Theory of Planned Behavior. Across these studies, attitudes had strong relationships with intention, while perceived norms and perceived behavioral control had moderate relationships with intention. These authors supported the usefulness of The Theory of Reasoned Action in predicting behaviors of patients and their following through with recommended screenings.

The behavior to screen adolescents for depression may be affected by each of these constructs. The construct of screening behavior is described according to which instruments the APRN uses to screen adolescents and whether they screen all adolescents or specific adolescents only. Behavior also includes whether the adolescent depression screening leads to a positive finding of depression and if so, what APRNs do with positive findings of depression in their screening behavior.

See Table 1.1 for a definition of all constructs included in this study as determined by the literature review and The Theory of Reasoned Action.

1.4 Research Questions

This study will address the following research questions, related to the adolescent depression screening behaviors of nurse practitioners:

1. What are the background factors, attitudes, perceived norms, perceived behavioral control, and actual control factors affecting screening of adolescents for depression by pediatric and family nurse practitioners?
2. What are the relationships among the background factors of age and length of time in practice, attitudes, perceived norms, perceived control, actual control and the behavior and action of screening adolescents for depression in family and pediatric nurse practitioners?
3. What instruments do family and pediatric nurse practitioners use to screen adolescents for depression during visits with adolescents and what do they do with positive depression findings?

Table 1.1 Definition of Study Concepts

Study concept or variable	Definitions
Adolescence/Adolescent	Adolescence is a developmental stage with physical changes in height and sexual maturation with problems of poor judgment and planning (Sadock & Sadock,2007; Tanner, 1962). The adolescent is between 12 and 18 years of age. The adolescent period is marked by the continued growth of the brain, especially the pre-frontal cortex which is center for judgment and planning. Abstract thinking is developed (Piaget,1983). Adolescence is the time of the formation of one's identity and maturity with emphasis on being accepted by one's peers (Erikson, 1959).

Table 1.1- Continued

Study concept or variable	Definitions
Family and pediatric nurse practitioner	Professional, licensed advanced practice registered nurse healthcare providers whose scope of practice is as an advanced practice nurse. They are able to assess, diagnose and treat numerous health problems in order to promote health and prevent disease in their patients.
Depression	A disorder of mood with feelings of sadness, loneliness despair, low self esteem and self reproach, loss of interest or lack of pleasure in life and neurovegetative symptoms of poor appetite and sleep disturbance, that has lasted for more than two weeks (APA, 2000;Elmquist, Melton, Croarkin, McClinton, 2010; Hardin, Schroth, Pine & Ernst, 2007)
Adolescent depression screening	A brief assessment by either interview or paper and pen or computer to identify the risk and presence of depression and to prevent depression developing or progressing that leads to brief interventions and/or further interventions (Cooke, & French, 2008)
Behavior of adolescent depression Screening	An observable event that targets the action of discovering the possibility of depression in an adolescent and occurs within a particular setting where the care is provided, and at a particular time in the delivery of care to the adolescent. It consists of both an effort to discover depression as well as an intention to take some action to manage the depression (Ajzen & Fishbein, 1980; USPSTF,2009).
Background factors/demographic Factors (Fisbein & Ajzen, 2010)	Individual, social and cultural variables of the nurse practitioner, adolescent or his family that may influence the nurse practitioner's behavior of screening adolescents for depression.
Attitude (Fishbein & Ajzen, 2010)	One's positive or negative view of a behavior.
Perceived norm (Fishbein & Ajzen, 2010)	Perceived social pressure to engage or not to engage in a Behavior

Table 1.1- Continued

Study concept or variable	Definitions
Perceived behavioral control (Fishbein & Ajzen, 2010)	Person's perceptions of his ability to perform a behavior, that includes internal and external factors, such as a feeling that the behavior can be performed and belief that the environment is conducive to performing the behavior.
Actual behavioral control (Fishbein & Ajzen, 2010)	The extent to which a person has the skills, resources and other prerequisites needed to perform a given behavior.

1.5 Assumptions

This study assumes several things.

1) Multiple variables may influence the likelihood that nurse practitioners would consider the diagnosis of depression in adolescents.
2) Common, though variable, risk factors and symptoms exist for adolescents who have depression.
3) It is the responsibility of nurse practitioners to assess for these factors and to recognize these depressive symptoms.
4) Nurse practitioners will respond honestly to questions about their screening practices and will report what truly occurs in their own practices.
5) The act of screening adolescents for depression can be studied using the constructs of background factors, perceived norms, perceived behavioral control and actual behavioral control from the Theory of Reasoned Action.

1.6 Summary

The screening behavior of pediatric and family nurse practitioners is a key component to determine the presence of depression in adolescents. To understand these health care providers' behaviors, some of the constructs of the Theory of Reasoned Action are helpful in forming an appropriate framework for this study. As sparse information exists on what prompts nurse practitioners to screen adolescents, this study will seek to identify these factors. Understanding

screening practices could provide the basis to provide interventions to improve health outcomes for adolescents. In the next chapter, a comprehensive review of the literature will discuss the major study variables of adolescent depression and of provider groups who may have the responsibility to screen adolescents for depression. Screening recommendations and screening instruments will be reviewed.

CHAPTER 2

REVIEW OF THE LITERATURE

2.1 Introduction

Depression is one of the most common mental illnesses experienced in adolescence with a lifetime prevalence approaching 20% and incidence rate of 8.3% among adolescents in the United States (Cronholm et al, 2010; Merinkangas, et al., 2010). The fact that many adolescents are undiagnosed and untreated for depression, is perhaps linked to a lack of screening for depression in adolescents. It is unknown why this problem exists, although attitudes, perceived norms, perceived control and actual control may affect the screening behaviors of primary care health care providers. In this chapter, the recommendations of health care agencies and professional groups to screen adolescents for depression will be discussed. The role of the primary care nurse practitioner is discussed as encompassing the actions of screening, diagnosing and treating adolescent depression. A review of the literature will describe risk factors and consequences of untreated depression in this population of young people. Particular symptoms that occur in adolescents who are depressed, the types of available screening instruments and the treatments that are available to alleviate adolescent distress are also provided. Whether primary care providers, especially nurse practitioners consider these issues related to adolescent depression when they evaluate adolescents at their health care visits remains unknown.

2.2 Depression Screening Guidelines

Recommendations for depression screening among adolescents provide insight into the construct of perceived norms for primary care health care providers. Routine screening for emotional and behavioral problems has been recommended by Medicaid's Early and Periodic

Screening, Diagnosis, and Treatment (EPSDT) program. Members of the American Academy of Pediatrics recommend that pediatricians ask questions about depression in routine history-taking throughout adolescence (American Academy of Pediatricians [AAP], 2002). Also, members of The American Medical Association (AMA, 1997) recommend screening for depression among adolescents who may be at risk as a result of family problems, drug or alcohol use, or other indicators of risk. In 1997, members of the American Medical Association recommended screening adolescents for depression to their membership (AMA, 1997). Also, reviewers for the U.S. Department of Health and Human Services have for the past 30 years developed a framework for health prevention priorities and outcomes known as *Healthy People*. In the Healthy People 2010 and Healthy People 2020 framework, recommendations for screening youth for depression were made (Fielding, et al., 2011; Healthy People, 2011). One new objective of Healthy People, 2020 was to increase depression screening by primary care providers and to increase the proportion of primary care physician office visits that screen youth aged 12 to 18 years for depression (Healthy People, 2011). Despite these recommendations, researchers for the United States Preventive Services Task Force reported 2.1 percent of primary care physicians screened for depression in 2005-2007, and, thus, set a target of 10% improvement (Williams, O'Connor, Eder, & Whitlock, 2009).

Researchers of The National Institute of Mental Health, a component of the US-Department of Health and Human Services, recognized that adolescents with depression are at an increased risk of suicide, which is the third leading cause of death among people aged 15 to 24 years of age (USDHHS, 2009) and that adolescents suffering from clinical depression are more likely to suffer depression in early adulthood. Also, researchers for the US Preventive Services Task Force (2009) examined the benefits of screening and treatment for major depressive disorder in children and adolescents. Their recommendations included screening all adolescents, age 12 – 18 years of age, for major depression when systems are in place to ensure accurate diagnosis, treatment, and cognitive, behavioral, or interpersonal psychotherapy, and follow up.

These researchers issued these recommendations because depression is disabling, with long term consequences, and recognized that adolescents who are depressed frequently go undiagnosed and untreated. In addition, those who developed the Institute of Medicine Report (Evans, 2009; National Research Council and Institute of Medicine [NAS-IOM], 2009) called for parity in the funding of prevention and treatment of depression, for all age groups, following a study of the epidemiology of mental, emotional and behavioral disorders and a review of the science of mental illness prevention. These efforts called for implementing and refining health promotion activities that can reduce the prevalence of mental health problems (Evans, 2009; Institute of Medicine [IOM], 2008).

The American Academy of Pediatrics (2002) research committees developed a national initiative for health promotion and disease prevention for children's health care needs in the context of the family and the community. The authors recommended anticipatory guidance and evaluation for mental health concerns in children starting at age 9 years old (AAP, 2002), a younger age than the USPTF recommendations. Research has not yet supported this early age for depression assessment. Yet, this effort indicates recognition of the need to assess for mental health concerns (Williams, O'Connor, Eder, & Whitlock, 2009). In time, research may support this earlier age to screen for depression (USPTF, 2009).

Various professional organizations, such as The American Academy of Nurse Practitioners (2007) focus on health promotion, disease prevention, health education and counseling as components of the role of nurse practitioners. Members of The National Association of Pediatric Nurses and Practitioners'(NAPNAP. 2007) have implemented a guide called Keep Your Children and Yourself Safe and Secure (KySS) (Melnyk & Moldenhauer, 2006). Recognizing the continuing need for child and adolescent mental health screening, this guide is designed for pediatric health care providers including pediatric nurse practitioners, pediatricians and family physicians and is intended to enhance these providers' ability to screen and intervene early in the treatment of common mental health problems in children and

adolescents. In addition, NAPNAP's board has written a position paper for pediatric nurse practitioners recommending the integration of prevention, screening and early identification of mental health problems into their practice (NAPNAP, 2007; NAPNAP, 2011).

The role of APRNs in providing care for specific mental health care needs of the adolescent is supported by many professional and political associations. In addition, several professional organizations have developed follow up for screening adolescents. Yet it remains unknown how primary care health providers, especially advanced practice nurses, have translated these requests and programs into perceived norms that lead to action. Whether APRNs are screening adolescents for depression and are able to offer follow up (such as referring adolescents for treatment, offering antidepressants, and providing education regarding depression) for a potential diagnosis of depression in this age group is unknown.

2.3 Universal vs Indicated/Targeted Screening

Researchers (Bryan, Corso, Rudd & Codero, 2008; Wintersteen, 2011; 2011) have considered approaches to screening adolescents as either universal or targeted screening. In universal programs, all patients are screened for suicidality. In indicated or targeted screening, the patient is screened for the presence of depression based on the cues they may present such as having a history of depression. Embedded within these choices to screen are factors such as attitudes toward screening, the influence of perceived norms and the issues of perceived control.

Wintersteen (2011) suggested focusing only on screening for suicidal ideation among patients in primary care as this symptom is related to depression and may be less frequently endorsed than other symptoms of depression. Bryan, Corso, Rudd and Cordero (2008) examined the idea of universal screening for suicide without looking at other cues to screen and found that only 2.1% of adults who had been screened and referred to a behavioral health provider had suicidal ideation. In another study of adolescents, Wintersteen (2011), using universal screening, found that 3.6% of adolescents who were screened endorsed suicidal ideation. When he compared the universal screening approach to an indicated or targeted screening approach, the

researcher found that the suicide risk related to depression among adolescents was 17.2%. Thus with universal screening, positive endorsement for suicidality is about five time lower. The universal approach minimizes the other symptoms of depression that may occur before one is actually suicidal. Universal screening has some advantages over indicated screening, however. As fewer patients are identified with the diagnosis of depression, this may alleviate some of the anxiety that primary care providers express about not having time to manage these patients, affecting their attitude toward screening. In addition, universal screening identifies clients who may be in need of an intervention but may not have been otherwise detected. Also, in targeted or indicated screening, patients without a history of depression are unlikely to be screened.

2.4 The Role of Nurse Practitioners in Screening

Gaps in quality of care may be related to workforce shortages that threaten provision of services. Currently, fifty-six million Americans, almost one in five, lack adequate access to primary health care because of shortages of physicians in their communities (National Association of Community Health Centers [NACHC], 2007). One study reported that 24 counties in the state of Texas have no primary health care providers (Hansen-Turton, Ware, & McClellan, 2009). Researchers also have shown that the numbers of medical students and residents entering primary care or pursuing careers in general internal medicine or family practice is steadily declining (American College of Physicians, 2006; Cooper, 2009). At the same time, a relative increase in APRNs is occurring with a projected annual increase of about 9% (Steinwald, 2008). In addition, between 1995 and 2006, primary care medicine residency training programs declined 3%, while primary care training programs for nurse practitioners grew by 61% (Cooper, 2009). Nurse practitioners deliver comparable care as physician providers and are often more affordable than physicians (Lenz, Mundinger, Kane, Hopkins, & Lin, 2004; Hollinghurst, Horrocks, Anderson, Salisbury, 2006). One study reported that nurse practitioner visits in the state of Massachusetts costs 20-35% less than the average cost of physician visits (Eibner, Hussey, Ridgely, & McGlynn, 2009).

Health promotion and screening of adolescents are particularly applicable to primary care advanced nursing practice (American Academy of Nurse Practitioners [AANP], 2003; Allan, Stanley, Crabtree, Werner, & Swenson, 2005). In an American Academy of Nurse Practitioners (2007) report, the role of APRNs was stated as including health promotion, disease prevention, health education and counseling as well as provision of clinical care. Standards of care for nurse practitioners from this American Academy of Nurse Practitioners report stated that the APRN allows the scientific process and national standards of care to guide the management of patient care. Each advanced nursing professional organization has developed and monitors standards of care for their subgroup of nurse practitioners (Watson & Hillman, 2010). This process includes assessing the patient's health status, making a medical diagnosis, developing a treatment plan, and evaluating the plan (Swenson, 2006). In a position paper on integrating mental health care into primary care, the executive board of The National Association of Pediatric Nurses and Practitioners (National Association of Pediatric Nurses and Practitioners [APNAP], 2007) recommended mental health promotion and screening and recommended screening and early identification of mental health problems in primary care practice.

Reeve, Byrd, and Quill (2004) used the Theory of Reasoned Action and the Theory of Planned Behavior as a framework to examine the NP characteristics, health promotion attitudes and practices of 727 Texas nurse practitioners (NPs) related to obesity, exercise, blood pressure, smoking, drug and alcohol use, immunizations, breast self exams, skin exams, pelvic exams, STD screening, oral exams, mammography, testicular self exams, prostate exams and sigmoidoscopy referrals. Their findings revealed that Texas NPs fell short of the Healthy People 2010 objectives: NPs counseled 58% of their patients on physical activity importance, while the targeted goal was 85%; 69% were counseled regarding tobacco use, but the target was 85%; 56% were counseled regarding alcohol abuse, yet the target goal was 95%; 61% were counseled on obesity and the goal was 60%; they reported immunization rate of 48.4% for a goal of 60%; they encouraged breast self examination for 47% of their patients while the goal was 85%; they referred 27% of

their clients for mammography, with a goal of 85% and referred only 10% for sigmoidoscopy, while the goal was 85%; they recommended testicular screening for 23%, though the goal was 85%; they monitored blood pressure on 78% of their patients, but the goal was 95%. In another small study, Berry (2009) evaluated the use of clinical preventive services (CPS), which included health promotion and disease prevention activities in nurse practitioner practice and found that only 60.4% of NPs used at least one CPS per visit. They compared transcribed interviews with post surveys between 28 NPs and 28 patients and concluded that what NPS think they do varies greatly from what they do and recommended research to look at the barriers to health promotion and disease prevention behaviors in nurse practitioners.

2.5 Adolescent Risk for Depression

Depression is one of the most common mental illnesses experienced in adolescence (Cronholm et al, 2010; Merinkangas, et al., 2010). Nonspecific risks for depression have been identified such as poverty (Gershoff, Aber, & Raver, 2003; Najman, et al., 2010), marital conflict or family disruption, child abuse and neglect (Buzi, Weinman, & Smith, 2007; Eaves, Silberg, & Erkanli, 2003; Grover, Ginsburg, & Ialongo, 2005), poor peer relations and community violence (American Academy of Child and Adolescent Psychiatry, [AACAP], 2007; Buzi, Weinman, & Smith, 2007; Carney, 2000; Grover, Ginsburg, & Ialongo, 2005; Farmer, Burns, Phillips, Angold, & Costello, 2003; National Research Council and Institutes of Medicine, et al, 2009; Richardson & Katzenellenbogen, 2005; Sagrestano, Paikoff, Holmbeck, & Fendrick, 2003). One study showed a positive relationship between the total number of risk factors and poor psychological adjustment, while cumulative protective factors, such as a loving home environment, good socioeconomic situation, good friends and a strong support system, may have the opposite effect of promoting good psychological adjustment (Sameroff, Gutman, & Peck, 2003).

Genetic background including parental depression have been linked to depression in adolescents (Buka, Monuteauz, & Earls, 2002; Fergusson & Woodward, 2002; Zalsman, Brent, & Weersing, 2006). Social issues that may predispose youth to depression include decreased adult

supervision and support, increased concern about social status and social rejection, increased parent-child conflict, and lifestyle changes that can predispose to depression such as substance abuse and sleep deprivation (Dahl, 2004; Nelson, Leibenluft, McClure & Pine, 2005). Females are more predisposed to depression than males (Bearman, 2008; Li, diGiuseppe, & Froh, 2006; Uddin, et al., 2010; Zahn-Waxler, Shirtcliff & Marceau, 2008) and problematic peer relationships, body image and self-esteem are more often associated with depression in girls than in boys (Hankin & Abrahmson, 2001; MacPhee, & Andrews, 2006). Girls who have failed in school are also more apt to become depressed (McCarly, et al, 2008). Researchers have shown that negative eating attitudes, low physical activity, body dissatisfaction or wishing that one weighed less, and maladaptive eating behaviors such as dietary restraint, overeating, bingeing and using substances to control weight are associated with depression (Crow, Eisenbergey, Story, & Neumark-Sztainer, 2008; Johnson, Cohen, Kotler, Kasen, & Brook, 2002; Presnell, Stice, Seidel, & Madeley, 2009; Stice & Bearman, 2001).

Although strides have been made in the causes and links to adolescent depression, many adolescents are not diagnosed with depression, and therefore not treated. Researchers also reported that most adolescents with mental disorders fail to be diagnosed or to receive treatment including the majority of those with serious emotional disturbances (Ani, et al., 2008; Davis, 2005; Melnyk, 2007; Merikangas, et al. 2010; Rey, Grayson, Mojarrad, & Walter, 2001).

2.6 Impact of Depression on Adolescents

Depression has a great impact on the life of adolescents and underscores the importance of primary care providers recognizing issues of internal and external components of perceived control and awareness of the factors that prompt screening for depression in this age group. Among adolescents who report depression, over 50% of this group report that they have suicidal ideation (Lewinsohn, Pettit, Joiner & Seeley, 2003). Nearly 2,000 adolescents commit suicide on an annual basis with depression being linked as a factor in the majority of these deaths (Koplewicz, 2002).

Depressed youth often have co-occuring tobacco and substance abuse which has the potential to precipitate or prolong a depressive episode (Brooks, Harris, Thrall, & Woods, 2002; Modrzejewska & Bomba, 2010). Risky sexual behaviors may occur in depressed youth (Brown et al., 2010; DiClemente et al., 2001; Lehrer, Shrier, Gortmaker & Buka, 2006; Mezzaferro et. al., 2006; Shrier, Harris, & Beardslee, 2002). In one study, researchers examined depression as a predictor of risky sexual behavior, among 715 African American female adolescents between ages of 15 and 27 (Seth et al., 2011). These researchers reported that high levels of depressive symptoms predicted no condom use during the last sexual encounter and multiple sexual partners over the last six months. Depressive symptoms also predicted having a primary or main sexual partner with other sexual partners during the same period of time, with high fear of communication about use of condoms, and engaging in sex while high on alcohol or drugs.

Early diagnosis and treatment of depression may increase the educational attainment of adolescents. Secondary schools and university based studies have shown that depressed students perform less well than their non-depressed peers (Frojd, et al., 2008; Hysenbegasi, Haas, & Rowland, 2005; Jonsson, et al., 2010). Research shows that individuals with depressive symptoms have lower educational and occupational attainment (Fergusson, & Woodward, 2002; Fletcher, 2008). Poor school performance, a change in grades, or academic failure are important markers of adolescent depression due to factors such as poor concentration, fatigue, withdrawal and chronic absenteeism (Harper, Marks, & Nelson, 2002).

Fletcher (2009) evaluated Add Health data from a national survey of 20,000 US students in grade 7 to 12 and gathered data about these students one year and six years later. In this longitudinal study, this author defended against reverse causality, or the idea that low education leads to depression. He found that a negative relationship between depressive symptoms and years of schooling exist, and reported that the greater the depression, the less the years of schooling. One standard deviation increase in depressive symptoms was associated with a 25-30% increase in the likelihood of dropping out of school. Depressive symptoms decreased the

likelihood of college enrollment by 4.4 percentage points for a one standard deviation increase in symptoms (Fletcher, 2009).

Understanding what may indicate the possibility of depression's presence in an adolescent may be expected to increase the index of suspicion in primary care health care providers, especially nurse practitioners, as they seek to promote long term health in adolescents. Consideration of the affects of depression and the risks that may lead to depression may be one key to increased screening of adolescents for depression. Yet, it is not known what factors prompt primary care nurse practitioners to screen adolescents for depression.

2.7 Adolescent Depression: What is Known

An understanding regarding the symptoms and treatment of adolescent depression has improved and articles have been published describing these concerns (Bhatia & Bhatia, 2007; Fassler, 2006; Kessler, et al., 2005; Klein, Dougherty, & Olino, 2005). Depression has the characteristic symptoms of a sad mood and loss of interest in usual life activities, with change in appetite and weight, changes in sleep and activity, lack of energy, feelings of guilt, problems with thinking and making decisions and may include recurring thoughts of death and suicide (APA, 2000). Researchers have shown that children and adolescents may exhibit different symptoms than are common in adults. The mood may be depressed, or it may be irritable and angry (Elmquist, Melton, Croarkin,& McClinton, 2010). Young people may also have somatic and physical complaints with poor response to reward incentives and show lower levels of self-reported positive affect (Harper, Marks, & Nelson, 2002; Hardin, Schroth, Pine & Ernst, 2007). Oftentimes, adolescents may become upset regarding life issues, such as breaking up with a boyfriend or girlfriend, or upon losing an important game. Their blues are considered a normal part of development. However, depression is not a part of normal development and does not pass in a short time.

Treatment for depression has been examined and evidence supports early diagnosis and treatment during adolescence to prevent lifelong problems with depression (Fassler, 2006;

Najman, et al., 2008; Wolfe, Dozoil, Fisan, & DePace, 2007). Most often, providers select a selective-serotonin reuptake inhibitor (SSRIs) which helps control mood as well as anxiety (Brent & Maalouff, 2009). The two most studied SSRIs in young people are Zoloft (sertraline) or Prozac (fluoxetine) and these two along with Lexapro (escitalopram) are approved by the FDA for use in teenagers. Treatment must be at an optimal dose for about an eight week trial to determine its effectiveness before changing meds. To prevent a relapse, treatment should last for at least six months to a year, and usually one year is optimal for a first time episode of depression in teenagers (Elmquist, Melton, Croarkin, & McClintock, 2010). Findings from the Treatment of Adolescent Depression Study (TADS) study (National Institute of Mental Health [NIMH], 2008) indicated that cognitive behavioral therapy and medication are the best treatment for adolescent depression and are the best option for reducing suicidality in this age group. However, medication alone had a better response rate than psychotherapy alone. Cogntive Behavioral Therapy (CBT) and Interpersonal Psychotherapy (IPT) have been suggested as being equally effective in decreasing depression inventory scores (Luty et al., 2007) and acute depressive symptomatology in adolescents with major depressive disorder (MDD) (DeRubeis et al., 2005).

Curry and colleagues (2011) published findings of the Survey of Outcomes Following Treatment for Adolescents (SOFTAD) funded by the National Institute of Mental Health (NIMH). This was the first study to compare long term outcomes following treatment with psychotherapy, Prozac or both, among adolescents. Findings revealed that major depressive disorder is often a recurrent disorder in adolescents. While nearly all adolescents recover from their index episode within two years, by five years recurrence affects between 40% and 60% of the samples studied. Recurrence is defined as a new episode of depression following recovery. The authors found several predictors of recovery or recurrence, though recovery was not associated with any particular treatment combination. Recovery was predicted by less severe symptoms ($p<.001$) and higher global function ($p = .02$). Significant predictors of non-recovery were appetite or weight disturbance and sleep disturbance (both $p=.03$). The mean time from recovery to first recurrence

was 22.3 months. Recurrence was predicted by four variables: sex (p=0.001), self- reported depression (p=0.01), suicidal ideation (p=0.009), and co-morbid anxiety disorder (p=0.003) with higher recurrence rates among females (females, 57%; males 32.9%).

Much information on the signs and symptoms of MDD in adolescents is known. Evidence shows the appropriate treatments of medication and psychotherapy. While adolescents often recover from depression, recurrence of the depression is likely and enforces the need for frequent screening of this population for depression (Meredith, et al., 2009). The nurse practitioner's access to knowledge of depression's presentation and treatment represents the construct of the internal components of perceived behavioral control.

2.8 The Path to Diagnosis and Treatment

In screening, diagnosing, and deciding how to treat depression in adolescents, constructs such as background factors, perceived control, actual control, perceived norms and attitudes may play an important role. The presence of knowledge about screening and depression in adolescents, reliable instruments, and good skills, as well as the beliefs that others perform and encourage this behavior, and that screening is important and relevant to the care of the adolescent are key considerations for the primary care nurse practitioner provider.

Recommendations for screening of all teens from the age of 12-18 for depression with the use of supportive management including psychotherapy for the diagnosis (Williams, O'Connor, Eder & Whitock, 2009) was made to The United States Preventive Services Task Force (USPTF). Members of the task force reviewed these studies and found enough evidence existed to support screening teenagers from the age of 12-18 years of age, though could not find enough evidence to support screening younger children. These researchers reported that primary care–feasible screening tools may accurately identify depressed adolescents and treatment can improve depression outcomes but no information on how to implement screening was provided.

The diagnosis of depression is based upon a person's symptoms, the duration of the symptoms and the overall effect these symptoms are having on the person's life (APA, 2000).

Information from parents and teachers is often considered during these evaluations and the evaluation usually begins with the adolescent's primary care provider. The ideal treatment for depressed adolescent should include referral to a trained mental health provider such as a psychiatrist, psychiatric mental health nurse practitioner, psychologist or therapist. There is currently no medical lab test that identifies depression, although tests may be done to rule out other medical conditions that could cause the symptoms of depression.

Not much is written that describes how screening practices occur and how primary care providers make the diagnosis of adolescent depression. In adult studies, screening takes place in only 3% of visits (Harrison, Miller, Schmitt, & Touchet, 2010). Williams, O'Connor, Eder and Whitock (2009) reported 2.1% of adolescents were screened for depression from 2005-2007. One study suggested that most clinicians are not using formal tools but prefer to rely on their own clinical skills (Mitchell, Kaars, Coggan & Herdman, 2008). Mitchell (2011) examined how well clinicians are able to diagnose depression using their day to day clinical skills and concluded that errors occur as clinicians look at distress levels rather than actual depression levels. These errors lead to misdiagnosis of mild depression symptoms as well as to many false positive errors. Mitchell concluded that clinicians have fairly good 'rule out' skills but poor 'rule in' abilities for the diagnosis of depression. Depression can be difficult to diagnose especially without the aid of a reliable and valid screening instrument. The absence of such an instrument is consistent with an actual control factor in the model of this study.

Understanding the symptoms of depression specific to the adolescent patient is important in evaluating for the presence of depression and represents background factors, external behavioral control and actual control. Harper, Marks and Nelson (2002) reported that rather than seek psychiatric care, approximately 20% of adolescents with a mental disorder will consult their primary care provider and often present with symptoms of physical discomfort. The provider must determine if the teenager has unique symptoms of depression and be able to differentiate these from adjustment or other life situations. This is difficult as the teenager may not present as an

adult might with low energy, sadness, and hypersomnia or insomnia, but is more likely to report a decreased interest in pleasurable activities and has lack of interest in socializing with friends. They often have extreme sensitivity to rejection and failure. Teenagers may have increased irritability, with outburst of shouting, complaining, crying, anger and hostility. They often present with non specific physical complaints such as headaches, muscle aches, stomachaches and tiredness. They may have several absences from school or poor performance in school and may say they are feeling bored. Often they have increased alcohol and drug abuse and may talk about running away from home.

Farmer, Burns, Phillips, Angold, and Costello (2003) described points of entry into the mental health service system. These authors used data stored from the Great Smokey Mountains Study that evaluated a sample of 1,420 young people from the original database. Participants were predominately white and nearly 30% of them lived in poverty. Considering psychiatric hospitals, community mental health centers, psychologists and psychiatrists in private practice as well as services provided in other sectors such as schools, child welfare, general medical care, and juvenile justice system, they found that 60.1% entered into mental health care through the education sector, 27.3% entered through the specialty mental health sector, and 12.9% entered through the general medical sector. The juvenile justice system was the second most common point of entry for youths between ages of 14 and 16 years and may indicate earlier recognition of these youths' mental state could have avoided entry into this system. These researchers demonstrated the value of effort to diagnose young people at every level of their life participation experience and the importance of collaboration among these three primary sectors: education, specialty mental health and general medicine. As most young people are always in school and usually seen at least annually by the medical sector, these two points of entry may be seen as valuable in screening and assessing for depression. Poor links between diagnosis and treatment was also evident in this study. This speaks to the effect that actual control has on screening and

subsequent treatment of young people. Yet it is not known what specifically prevents diagnosis and treatment for depression.

As previously discussed, evidence exists to support a diagnosis of depression and the value of subsequent treatment of depression as being beneficial to optimal health and life outcomes for this age group. Yet, no evidence in the literature indicates that this type of assessment and screening is routinely done in primary care practices with adolescents by pediatric and family nurse practitioners and no evidence demonstrates what occurs with a positive finding of depression.

2.9 The Practice of Screening

Screening tests are intended to detect potential health problems. Recognizing their value is important for provider's use and choice of a screening instrument. The Snellen eye exam is an example of an instrument used to screen for nearsightedness that is highly useful to determine vision problems (Broderick, 2000). Other screening is commonly done by primary care providers with good results. For instance, audiometry assessment for hearing problems (Centers for Disease Control [CDC], 2010), mammograms, pap smears (Lowry, 2009; World Health Organization, 2008), colorectal assessments (Walsh & Terdiman, 2003), as well as the Framingham study on cholesterol and BMI screening for reduction in cardiovascular disease (D' Agostino, et al., 2008) have all assisted providers to make appropriate diagnoses. They have assisted patients to achieve optimal health. These assessments are well established components of the health exam. Depression screening is as important as each of these evaluations and can be used in the same manner: to establish an appropriate diagnosis and to monitor the progress of the problem.

Screening of adolescents for depression is meant to increase the identification of depression in this population. No current studies could be found that discussed the frequencies of identifying depression in young people. Yet, in dated studies, pediatric primary care providers failed to identify half or more of mental health problems in youth (Lavigne, et al., 1993;

Richardson,, Keller, Selby-Harrington, & Parrish, 1996). Brown and Wissow (2010) reported that pediatric care providers might choose not to screen because they have concerns about how useful a screen is and concerns about how screening might affect their practice, reflecting the construct of attitude toward screening. These researchers compared the use of a screening instrument to the providers' assessment of the child without a screening instrument in 767 patients ages 5 to 16. They found that the screening instrument identified twice as many patients with moderate symptoms of mood disorders and nearly 28% more patients with high symptoms than when providers use their instinct and intuition to determine the presence of depression. They concluded that screening has the most potential to increase the identification of problems among these patients.

Scott, Luxmore, Alexander, Fenn and Christopher (2006) found that a substantial proportion of adolescent patients with non-psychiatric chief complaints reported moderate or severe depressive symptoms when seen in emergency department visits. They recommended screening programs to allow earlier identification and referral of patients at risk for depression, but they did not offer a method to provide this screening and referral of depressed patients. These researchers reflect the construct of screening behavior but due to the sparseness of current literature, more research needs to be provided to learn about the extent of adolescent screening and the practices of pediatric and family advanced practice nurses and what constructs affect screening practices.

2.10 Screening Instruments

Although many instruments are available to screen for depression, those selected for use must be reliable and valid instruments. These instruments should have both adequate 1) sensitivity, that is the ability to positively identify those with depression and 2) specificity, or the ability to adequately identify those without the condition (see descriptions of instruments in Appendix A). Members of the USPSTF (2009) especially recommended two screening instruments that are effective in primary care: the Patient Health Questionnaire for Adolescents

(PHQ-9) and the Beck Depression Inventory-II (BDI-PC) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Richardson, McCauley, et al., 2010). Instruments are often available free of cost, such as the Patient Health Questionnaire (PHQ-9) (Kroenke & Spitzer, 2002), Center for Epidemiological Studies for Depression (CES-D) (Radloff, 1991), the Children's Depression Scale (Poznanski, Freeman, & Mokros, 1996), The Guidelines for Adolescent Preventive Services Questionnaire (Elster & Kuznets, 1994), the Pediatric Symptom checklists (Jellinek, Murphy, & Little, 1999) or the Zung Self Rating Scale (Zung, 1965). In contrast, some come in kits and require purchase such as the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), the Reynolds Adolescent Depression Scale (Reynolds, 2002), or the Children's Depression Inventory (Poznanski, Freeman, & Mokros, 1996). Many instruments such as the PHQ-9, are self reporting allowing the patient to fill them out before being seen by the primary care provider. Others use an interview style and take more time, such as the HEADSS, which is especially good at determining suicidal risk in adolescents (Biddle, Sekula, Zourcha & Puskar, 2010) or the Children's Depression Rating Scale-Revised (CDRS-R) (Poznanski, Freeman, & Mokros, 1996). Several are available online for the patient to fill out and responses can be submitted directly to the provider, such as the GAPS Questionnaire (AMA,1975). Some are short such as the Kandel Depression Scale (Kandel & Davies, 1982), or the Quick Inventory of Depression symtomatology (QIDS), which can be used as a clinician rated or patient report instrument (Rush, et al., 2003). Others are lengthy and are used primarily for research such as the CES-D, the Children's Depression Inventory, the Diagnostic interview Schedule for children (DISC) and the Reynolds Adolescent Depression Scale (RADS) (Reynolds & Mazza, 1998; National health and Nutrition Examination Survey [NHANES] ,2006).

The available instruments are often specific to a particular age group, such as the Children's Depression Scale which is reliable in children between ages 6 and 12, the Pediatric Symptom Checklist used for 3 to 16 year olds, or the GAPS Questionnaire used for 11 to 21 year olds, the Beck Depression Inventory designed for 13 to 18 year olds and the Reynold's Adolescent

Depression Scale useful for 11 to 20 year olds. Some are considered easy to administer and score, as the BDI-II, the CES-D, the PHQ-9 and the Zung Self Rating Scale (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Rey, Grayson, Mojarrad, & Walter, 2002). The Subjective Units of Distress (SUDS) is a visual analog scale that allows the patient to rate on a scale of 0-10 how severe he perceives his mood to be and is often used to monitor progress of treatment (Kaplan, 1995). The PHQ for Adolescents is available in multiple languages and is reliable for several ethnic groups (Huang, Chung, Kroenke, Delucchi, & Spitzer, 2006). The Children's Depression Inventory is also available in over 20 languages (Kovacs, 2003). Others such as the BDI, The Children's Depression Scale, the Kandel Depression Scale, the QIDS, and the Zung Depression Scale are also available in multiple languages. The CES-D, the DIS-C, the GAPS, and the Pediatric Symptom Checklist are available in English and Spanish.

As discussed above, several instruments are available to screen adolescents for depression. Yet, there is no consensus on the use of these instruments and no information can be found to determine if reliable and valid screening instruments are used in adolescent depression screening by pediatric and family nurse practitioners.

2.11 Adolescent and Family Barriers to Screening

Adolescents and their families may have concerns about being diagnosed or treated for depression that may present a barrier to the health care provider. These represent external factors of perceived controls. Factors such as fear of stigma can prevent reporting mental illness or seeking treatment. Resistance to treatment because of a high prevalence of negative associations with mental health diagnoses can occur. Different expectations of what type of treatment is needed may occur. Cultural views can shape patients' views and effect mental health values and treatment seeking behaviours (Choi, 2005; Cooper, et al., 2003; Cronholm, Barg, Pailler, Wintersteen, Diamond & Fein, 2010; Dwight-Johnson, Sherbourne, & Liao, 2000; Pincay, Martinez, & Guarnaccia, 2007; Wu, Hoven, & Hoven, 2001).

2.12 Provider Constructs Affecting Screening

Constructs, such as attitudes, internal and external perceptions of control, actual control and perceived norms, affect screening behaviors of primary care health care providers. Cronholm, Barg, Pailler, Wintersteen, Diamond and Fein (2010) described perceptions towards screening adolescents among 41 urban area emergency department health care providers. Even though participants agreed that the ED may be the only source of care for most teenagers, and realized that depression may contribute to their reason for the emergency visit, ambivalence over the appropriateness of the ER for screening for depression was described. This ambivalence provides an indication of their attitudes toward screening. A perceived lack of trust between patient and provider, a sense of breech of expectation related to why the patient went to the ER in the first place, privacy issues, lack of time, lack of training, the acuity of the presenting complaints and the bustling nature of the ED care were all described as obstacles such as internal and external perceptions of control, actual control and perceived norms that affect their screening behaviors (Cronholm, Barg, Pailler, Windersteen, Diamond, & Fein, 2010).

Schmitt, Miller, Harrison and Touchet (2010) evaluated the possibility that screening for depression might increase the duration of an office visit as one factor that might explain lack of screenings and thus influence actual control. They reviewed data from the National Ambulatory Medical Care Survey and examined the relationship between physician depression screening and office visit durations in a cross sectional sample of 14,736 visits from a population of 641 million office visits. Depression screening was significantly associated with increased visit duration with OR of 3.66, CI 2.25-5.95. Visits increased from 15 minutes to 16- 30 minutes long when depression screening was documented.

Harrison, Miller, Schmitt and Touchet (2010) reported that adolescent depression screening among physician practice visits in the United States appear to occur in about 2.29% of visits. They speculated that screening behavior, internal and external perceptions of control, as

well as actual control for this low percentage may indicate problems with screening intervals or strategies, lack of reimbursement incentives or incomplete documentation in medical records.

No articles could be found that described nurse practitioner behaviors in screening adolescents for depression. One article examined pediatrician behaviors in dealing with depression management, suggesting attitude, actual control, and perceived control factors and may relate to the practice of nurse practitioners. Possible issues related to screening for depression among pediatricians were described (Olson et al., 2001). These researchers evaluated pediatricians attention to depression in children and adolescent in a survey study (n= 280) with a 63% response rate. Pediatricians reported it was their responsibility to recognize depression in both children and adolescents (90%) but were unlikely to feel responsible for treating depressed children or adolescents (26%–27%). Those with most of their practice in capitated, managed care settings were less likely to feel responsible for recognizing depression in either children or adolescents. Forty-six percent of pediatricians lacked confidence in their skills to recognize depression in children, and few of them (10%–14%) had confidence in their skills in different aspects of treatment of depression with children or adolescents. Diagnostic, assessment, and management details for their last recalled case of depression in a child or adolescent were provided by 248 of these pediatricians. In addition to referring 78%–79% of the cases to mental health care professionals, 77% of pediatricians provided a wide range of brief interventions. Only 19%–20% prescribed medication. Major factors cited that limited their diagnosis or management were time (56%–68%) and training or knowledge of issues (38%–56%). Fewer pediatricians noted limitations due to insurer or financial issues (8%–39%) or patient issues (19%–31%).

2.13 Gaps in Knowledge

Despite the scientific knowledge and professional recommendations related to adolescent depression, as well as the availability of several reliable screening instruments, a gap exists between the discussion of risk factors, symptoms, recommended screening and treatment and in what actually does happen in practice. Adolescents are not being diagnosed and treated for

depression as perhaps they are not being screened. Evidence does not describe the specifics of screening, whose responsibility it is to provide this service, and what may impact screening practices. The care of adolescent health is relegated to a few providers, such as family doctors or pediatricians and nurse practitioners. APRNs are the largest group among these providers. These nurses are skilled, affordable and often work in environments where adolescents go for their health care. Thus, a lack of information on their screening behaviors and motivating factors to screen adolescents for depression needs to be addressed. Without this knowledge, it is impossible to improve adolescent depression screening practices and the care of adolescents who are depressed.

2.14 Summary

In this chapter, a review of the literature discussing the concerns of adolescent depression screening has been provided. The feasibility of nurse practitioners providing this care has been discussed. Issues related to adolescent depression such as risk factors, consequences of depression and treatment methods have been provided. Information on the available depression screening instruments has been given. Factors that may inhibit or encourage screening among health care providers, guided by the Theory of Reasoned Action have also been reviewed.

This review described what we know about adolescent depression, but also indicated the need for further research to fill in the gaps of knowledge related to screening adolescents for depression by pediatric and family nurse practitioners. It is unknown what prompts screening, when the nurse practitioner screens, what instruments are used to screen and what is done with positive depression screenings in the care of adolescents.

In the next chapter, methods of this study will be discussed. This discussion will include sample size, setting, and measurement method, procedure for collecting data, ethical concerns, data analysis techniques and delimitations of this study.

CHAPTER 3

METHODS AND PROCEDURES

3.1 Introduction

This chapter describes the research design, sample and setting of this study of adolescent depression screening and depression management practices of pediatric and family nurse practitioners in the state of Texas. In this chapter, a description of the survey is provided. A discussion of the procedures for data collection and data analysis has been given. Ethical considerations and delimitations of this study are included.

3.2 Research Design

This study used a descriptive, correlational design to examine the adolescent depression screening practices of pediatric and family nurse practitioners. The study described the issues related to adolescent depression, the role of primary care nurse practitioners and the feasibility of this professional group providing adolescent depression screening, and the constructs of background factors, attitudes, perceived norms, perceived behavioral control and actual control. The relationships between the behavior of screening adolescents for depression, which included actual screening and the decision to provide care for those who screen positive, and constructs of the Theory of Reasoned Action such as background factors, attitudes, perceived norms, perceived behavioral control and actual control were explored. No previous research findings were found that included this study's variables related to adolescent depression.

3.3 Sample

The target population of this study was licensed members of the Texas Board of Nursing (Texas Board of Nursing [Tx BON], 2010) who practice in the state of Texas as family and

pediatric nurse practitioners. The sample was a non-random convenience sample that was obtained from the membership lists of the Texas Board of Nursing. The entire list of providers was included in the request to participate in this study.

An adequate sample size helps prevent internal validity issues. Internal validity is the approximate truth about inferences regarding cause-effect or causal relationships. Thus, internal validity is only relevant in studies that try to establish a causal relationship. It is not relevant in most observational or descriptive studies. In addition, an adequate sample size helps the findings from the sample to be generalizable to the population of the study, thus promoting external validity (Ellis, 2010; Grove, 2007; Murphy & Myors, 2004). This study described the screening practices of nurse practitioners in the state of Texas and is not generalizable to the entire population of nurse practitioners. A difference might exist between Texas nurse practitioners and nurse practitioners who practice in other states. However, an adequate sample was important to be able to have adequate information on the target population of Texas nurse practitioners**.**

Krejcie and Morgan (1970) published a formula and table for determining sample size[1] based on finite population numbers.

$$s=\frac{X^2NP\,(1-P)}{d^2\,(N-1)+X^2P(1-P)}$$

As the population increases, the sample size increases at diminishing rates and remains fairly constant with populations greater than 380. Given the finite number of nurse practitioners in the population, this formula was useful for this study's sample size. A confidence level of .05 (1.64-1.96) and X^2 = 3.84 (the table value of Chi-Square with d.f =1) will be used. The population proportion was assumed to be .05, as that will generate the largest sample size.

$$s=\ \underline{3.84 \text{ x } 6778 \text{ x. } 5\ (1\text{-}.50)}\ /\ .05^2 \text{ x } 6778\text{-}1\ +\ 3.84 \text{ x } .5\ (1\text{-}.5).$$

An acceptable sample size for this study was 364 family and pediatric nurse practitioners.

[1] S= sample size; X^2 = table value of chi-squared for 1 degree of freedom at desired confidence level; N=population size; P=population proportion, assumed to be .50 as this provides maximum sample size; d=the degree of accuracy expressed as a proportion (.05).

Table 3.1 Sample Size

Type of provider	*N*=	*n*=	*Assuming 10% respond*, Boosted size of sample (n invited to participate)
Family/Pediatric Nurse Practitioner	6778	364	3640

For total population *N*=6778, sample size *n*= 364 was needed, according to the calculation above. Yet, the requirements for obtaining a sufficient sample size, *n*=364, needed to be boosted, as surveys usually assume that only about 10% of those invited actually participate in the study. Some studies have suggested about a 40% response rate for professionals (Fowler, 2009; Touger-Decker, 2006). Thus, a total of 3640 participants needed to be invited to participate, with a hope that a sample of 364 would be obtained. However, instead of a sample survey, a population survey was done and all licensed members of the family and pediatric nurse practitioner roles were invited to participate in this study (Texas Board of Nursing, 2010). However, of the 6940, some were ineligible to be included in this study (Figure 3.1).

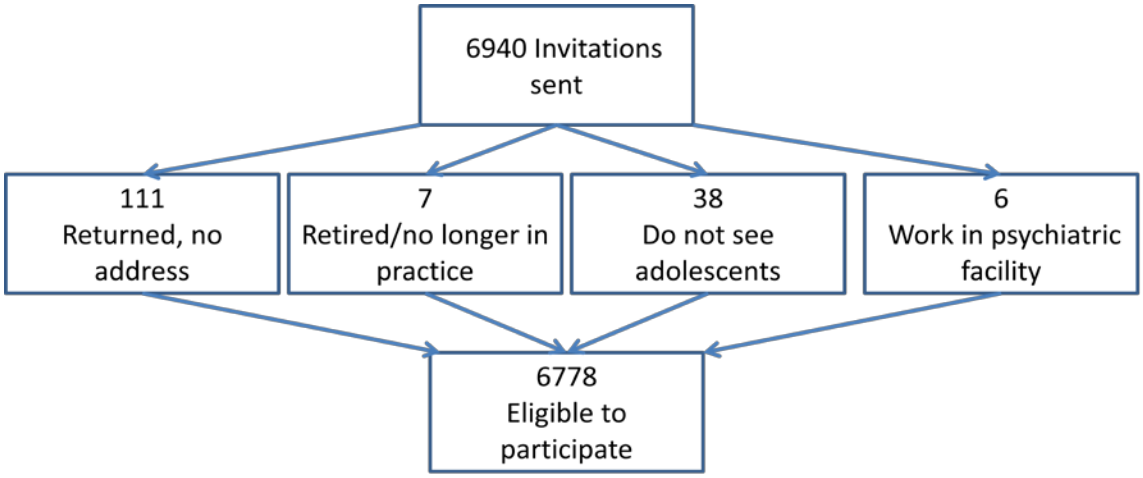

Figure 3.1 Eligible to Participate in Study

Subjects were recruited through U.S. mail. Lists of nurse practitioners were purchased from the Texas Board of Nursing. A cover letter explaining the study with contact information and a post card was mailed to their home addresses explaining the study and asking their participation

in the web-based survey (See Appendix B). This first postcard was to be returned upon completion of the survey by the respondent, but could not be linked to the survey responses. The postcard was used to avoid mailing a second request to participate to those who had already responded. When a sufficient sample size was not obtained, a follow-up reminder postcard was mailed two weeks later to those who did not respond to the first mailing (See Appendix C). In addition, when a sufficient sample size was still not obtained, a prompt to participate that provided the link to the SurveyMonkey site was provided on the Dallas Chapter of the National Association of Pediatric Nurses and Practitioners' (NAPNAP) website.

3.4 Setting

The setting was pediatric and family nurse practitioners in the state of Texas who are currently licensed and are registered with the Texas Board of Nursing. The family nurse practitioners and pediatric nurse practitioners needed to be in active practice with a current license to practice in the state of Texas. These providers worked in various settings, such as community based centers, schools, retail clinics, private practices, emergency rooms, urgent care centers, or immunization clinics.

3.5 Measurement Methods

A 44 item survey developed specifically for this study was used to collect information from the sample (See Appendix D). This survey sought information on issues related to whether providers screen adolescents, what factors may prompt them to assess for depression, what instruments they use to screen adolescents, what factors might exist that influence their screening and what they do with any findings of a positive depression screening. These items were linked to the proposed research questions of this study as well as to the selected constructs from the Theory of Reasoned Action (Table 3.2). The survey took about 20 minutes to complete.

To develop content validity for this survey, three content experts were utilized to judge scale relevance according to the Theory of Reasoned Actions and to see if the items represented

these constructs, were clearly written and easy to answer (Appendix E). The content experts included PhD prepared individuals, who are all university faculty members. One of these experts also practiced as a family nurse practitioners; one expert practiced as a pediatric nurse practitioner, and one expert was an experienced nurse researcher who has received an NIH grant for her own research and who has taught research courses at the Masters' level. Content validity index (CVI) was calculated to quantify the extent of agreement between the experts. The content experts were given the purposes of the study, the definition of the TRA constructs, a separate list of the survey items and asked to rate each item. They were asked to consider whether the items were clearly written, relevant for the purpose of the study and easy to answer, according to the objectives. They rated each category as: 1) not relevant/poor, 2) somewhat relevant/adequate, 3) quite relevant/good and 4) very relevant/excellent. According to Lynn (1986) a CVI of .80 is acceptable. The obtained CVI of 1.00 affirms that adequate content validity was obtained for the survey items (Polit & Beck, 2006; Polit, Beck & Owen, 2007). The experts recommended changes in some of the item wording and re-structuring of the Likert scale wording for some of the items. These changes were made.

3.6 Procedure

Data collection was done using SurveyMonkey, a web-based program that allows the respondents answers to be collected and directed immediately into SPSS program for analysis. SurveyMonkey requires users to create a unique user name and password that must be entered each time a user logs on. When a user accesses secured areas of the site, Secure Sockets Layer (SSL) technology protects user information using both server authentication and data encryption, ensuring that user data is secure, and available only to authorized persons (SurveyMonkey, 2011). Data collection occurred from February 4 – March 15, 2012.

Initially, a research packet with an invitation letter, explaining the study and a self addressed postcard was mailed to each potential subject. The postcard had a code linking the respondent to the mailing list and was used to determine who returned their survey, so that future

requests to participate were not mailed to the respondents. The codes were generated by the researcher, beginning with number 00001 and began with either FNP or PNP, depending on the role of the invited participant. The codes were kept on the mailing list and were highlighted upon return of the postcard. In addition, as each postcard was returned, it was placed in an envelope that was marked with the date of its receipt. These sealed envelopes were stored in the researcher's office.

Table 3.2 Constructs of TRA Matched to Survey Items

Construct	Item
Background factors	2- role 4- work time 5- where work 6- age 7-taught about screening 8- length of time in practice 9, 11, 13, 15, 17- type of service provided 21, 22 factors that prompt screening
Attitudes	23- screening is a part of my job 34,35- acceptance of diagnosis and plan to treat
Perceived norms	25- peers/colleagues screen 26- professional organization recommendations
Perceived Behavioral control	Internal factors: 28-adequate training 39- competence to screen External factors: 27- time to screen 31- job setting is conducive to screening 32- insurance reimbursement 36- adolescents' physical problems distract 38- discussion of depression
Actual Control Factors	24- I do have access to methods to treat depression 29- access to instruments to screen adolescents 30-administrative support of screening adolescents 33- someone else screens 37- reliability of instruments for population served

Table 3.2- Continued

Construct	Item
Behavior	10, 12, 14, 16, 18 screening 19 - screen all or targeted patients? 20- screening instruments used? 39- screening results in positive findings? 40,41, 42, 43- what is done with positive screens?

The surveys were password protected assuring the anonymity of the respondent. Only the researcher had access to this password. Activating the SurveyMonkey site and filling out the survey were evidence of consent to participate in the study. The researcher, the chair of the dissertation committee, and the UTA IRB contact information were provided to the potential respondents in the letter which invited their participation.

Inclusion criteria were met by responding “yes” to question 3, that asked if the respondent provides care to adolescents, age 12 to 18 years of age. Those who responded that they do not care for this age group and those who stated their role was that of a psychiatric mental health nurse practitioner were excluded, as those providers would naturally diagnose and treat major depression in depressed teenagers as a component of their role. Information from the study will be stored for three years in a locked office at the University of Texas at Arlington. A mailing company assisted with printing the letters and postcards and mailed the information to the potential subjects.

Surveys may result in item non-response. Suggestions for preventing this issue included creating a short questionnaire and development of clear and concise items. Although missing data may be handled by analysis methods such as imputation, the analysis should take into account that a greater deal of uncertainty exists, than if the imputed values had actually been observed (Dale, 2006, p. 150). One study on statistical standards stated that item response rates for each key item should be at least 90% (National Center for Education Statistics, 2007). For this study, due to the small sample size, all responses were calculated and the *n* was reported for each response.

3.7 Ethical Considerations and Risk vs Benefits Issues

Obtaining knowledge through survey research requires public trust. Thus, this researcher adhered to ethical practices and principles (Gilman, 2008). Each participant was helped to understand the nature and purpose of the survey, what was expected of them if they participate, the expected length of time necessary for them to complete the survey, how the data would be used and their right to confidentiality. With such information, the participants were able to make an informed decision on whether or not to participate. An explanation of all of these issues were included in the invitation to participate in the study and were mailed to the potential subject along with the coded postcard (Appendix B). These postcards were self -addressed and pre- stamped to return to the researcher and were used to determine the participation of the subject, so that future contact was not made. The returned post cards were stored in sealed envelopes in the researchers' locked office. At the end of the study, those participants who marked the postcard indicating their desire to be informed of the findings of the study will be sent a brief report of the findings.

The researcher received exempt status for research under 45 CFR 101 (b) with the Institutional Review Board of the University of Texas at Arlington (University of Texas at Arlington, 2011) (Appendix E). As a survey study, this study was exempt but also met the criteria that no children were participating in the study and no identification of the subjects occurred that linked the responses to the individual (US-DHHS, 2004). No names or identifying labels were found on the returned surveys, and confidentiality and anonymity were assured. The respondents were only recognized through their returned postcards but these could not be linked to their returned surveys. The surveys were password protected thus assuring anonymity of the respondents. Activating the SurveyMonkey site and filling out the survey were evidence of consent to participate in the study.

The respondents were informed that they could skip questions or stop the survey at any time. No consequences related to their participation have been reported nor will their lack of participation affect ,their involvement with the University of Texas at Arlington now or in the future.

The survey had a potential risk that respondents may have felt threatened. By providing answers to survey items, they may fear appearing incompetent or as not following guidelines of their profession or practice sites, especially if a response could be linked to them and made known to others. It was hoped that by clarifying to all respondents that all responses were unable to be linked to their identity, this risk was minimal. The potential benefit of this study was the opportunity to gain knowledge about the state of care for adolescents in the state of Texas. The respondents were offered the opportunity to be contacted on the findings of the study if they provided their email address on their returned postcards.

3.8 Data Analysis

The items of the survey have been linked to the TRA constructs. They were used to compute total scores for attitude, perceived control, actual control, perceived norms, screening behavior and screening action (See Table 3.3). Cronbach's alpha for reliability of internal consistency was calculated for these total scores: attitude (α = .628), perceived behavioral control (α= .628), actual control (α =.645), and perceived norms (α = .639). These values were low and perhaps related to the complex constructs and the effort to measure multiple facets of each construct (Nunnally & Bernstein, 1994). An exploratory factor analysis identified at least one item that did not load with the other items.

Table 3.3 Computing Scores Corresponding to Study Constructs

Construct	Scoring
Background	Age (item 6)- use as reported in years Length of time practitioner has been in practice (item 8)- zip code (item 1); role (item 2); % of time works (item 4) where works (item 5); educational preparation for screening (item 7); factors that prompt screening (items 21 & 22)
Attitude score	Computed sum of item 23, 34 and 35

Table 3.3- Continued

Construct	Scoring
Perceived control score	Computed sum of item 27 28, 31, 32, 36, 38, 39 (Item 36 was reverse scored.)
Actual control Score	Computed sum of items 24, 29, 30, 33, and 37
Perceived norm Score	Computed sum of items 25 and 26
Screening behavior score	Proportion calculated by dividing the total number of types of visits in which a provider screens adolescents for depression (items 10, 12, 14, 16, and 18) by the total of types of visits in which the provider sees adolescents (items 9, 11, 13, 15, and 17).
Screening action Score	Computed sum of items 41, 42, 43
Instrument use and finding	Item 20; Item 40

Statistics were primarily non-parametric. For relationships, Spearman's rho correlation coefficient test for relationships was used when the first and second variable were ordinal level data, the first variable was interval and the second variable was ordinal, or the first variable was interval and the second variable was ordinal. Sample mean and standard deviation were calculated for these correlations. For nominal data such as background information or which type of instruments were used, percentages and frequencies were calculated. For open ended questions, lists of responses were created to determine if similarities existed among respondents. Content analysis was performed (See Table 3.4) (Corder, 2009; Burns & Grove, 2009; Munhall, 2007).

Table 3.4 Data Analysis

Analysis	Statistics/Type of Analysis
What are background factors of NPs	Percentages/description
What instruments are used for screening?	Percentages/description
Relationship of background factors of age and years in practice to behavior of screening	Spearman rho/ relationships
Relationship of attitude score to behavior of screening	Spearman rho/ relationships
Relationship of perceived norms score to behavior Score	Spearman rho/ relationships
Relationship of perceived behavioral control score to behavior of screening score	Spearman rho/ relationships

Table 3.4- Continued

Analysis	Statistics/Type of Analysis
Relationship of actual control score to behavior of screening score	Spearman rho/ relationships
Relationship of screening behavior score to screening action score	Spearman rho/ relationships
Factors that prompt screening	Content analysis/description

3.9 Delimitations

The delimitations of this study were that the sample consisted of Family Nurse Practitioners and Pediatric Nurse Practitioners and only those who practiced in Texas. The findings of this study cannot be generalized to all health care providers, such as those who practice in hospital settings or to physicians, physician assistants or to primary care nurse practitioners in the U.S who practice in similar roles.

3.10 Summary

This chapter describes the methods that were used to examine the adolescent depression screening practices and management of depression used by family and pediatric nurse practitioners in the state of Texas. The sample was described. Ethical and risk and benefits of the study were discussed. Information was given on how the survey items match the TRA and how the items were analyzed.

CHAPTER 4

FINDINGS

4.1 Introduction

The purpose of this chapter is to present the findings of a study conducted with pediatric (PNPs) and family (FNPs) nurse practitioners in the state of Texas that describes the factors influencing adolescent depression screening practices in FNPs and PNPs. This study assesses background factors, attitudes, perceived norms, perceived control, and actual control as constructs from Fishbein and Ajzen's Theory of Reasoned Action (2010) that may affect the adolescent depression screening behaviors of PNPs and FNPs. This chapter contains the sample characteristics and participant responses to the study's instrument. Throughout this chapter, statistical results for each research question are presented.

4.2 Description of Sample

Data were collected using SurveyMonkey from pediatric and family nurse practitioners in Texas. The population of these advanced practice registered nurses, as indicated by the list purchased from the Texas Board of Nursing , who were licensed to practice in the state of Texas, and totaled 6940, with 5834 licensed as family nurse practitioners (FNPs) and 1106 licensed as pediatric nurse practitioners (PNPs). Of these, 162 were eliminated due to incorrect mailing address, retirement, working in psychiatric facility or not seeing adolescents in their practice, leaving 6778 who were eligible to participate. Total respondents were n=193. Those who met the inclusion criteria of caring for adolescents 12 -18 years, consisted of 166 nurse practitionerseligible to participate (Figure 4.1). The total response rate of those eligible to

participate in this study is 2.8 %. This represents a 5.4% % (*n*=60) response rate for pediatric nurse practitioners (PNPs) and a 1.81% (n=106) response rate for family nurse practitioners (FNPs).

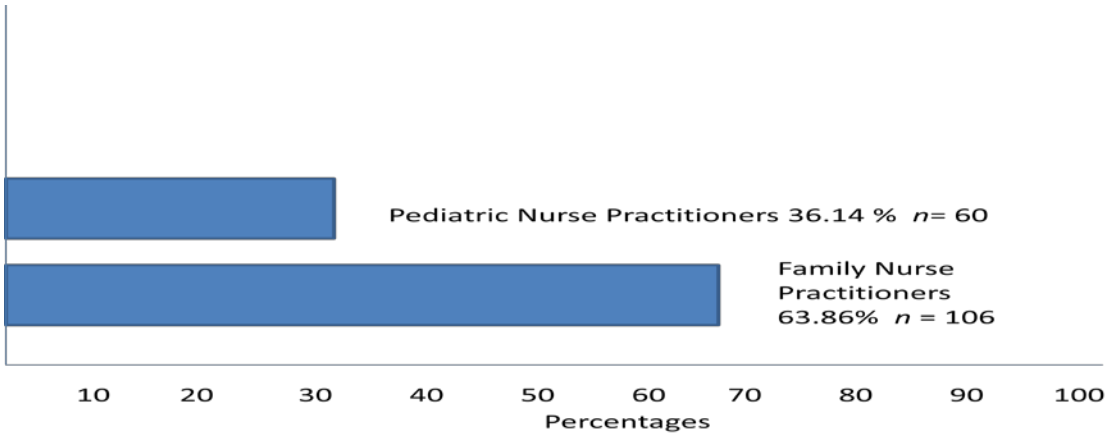

Figure 4.1 Nurse Practitioner Role

Though this sample size is small, the participants represent nurse practitioners from 75 different counties in the state of Texas, including both rural and urban areas of the state. Additional descriptions of the sample are included under Background Factors in the next section.

4.3 Statistical Analysis of Study Results

The three research questions of this study were based on the constructs of the Theory of Reasoned Action by Martin Fishbein and Iczek Ajzen (2010). The data addressing each of these questions were analyzed using SPSS and the appropriate parametric or nonparametric statistics.

4.3.1 *The First Question*

The first research question was: What are the background factors, attitudes, perceived norms, perceived behavioral control, and actual control factors affecting screening of adolescents for depression by pediatric and family nurse practitioners? The review of the literature and the research related to the Theory of Reasoned Action suggest that these constructs may affect

behavior (Anderson & Lavallee, 2008; Campbel, 2009; Cooke & French, 2008; Reeve, et al., 2004) . Each of these constructs was operationalized using a survey created by the researcher. Using SPSS, a score was computed for each construct. Means and standard deviations were calculated.

4.3.1.1 Background factors

Age, the length of time nurse practitioners have practiced, where nurse practitioners work, the percentage of time nurse practitioners work, their education preparation for adolescent depression screening and the factors that prompt them to screen adolescents for depression were included in the back- ground factors that were analyzed. The nurse practitioners ranged in age from 27 to 68 years of age (*M* = 45.8, *SD*=10.9) and practiced in various sites (Table 4.1). Over half of the respondents worked in private practices. Length of time in practice as nurse practitioners ranged from 3 months to 33 years (*M*=9.5*, SD*=7.7). Of the 160 respondents, 80% (*n*=128) worked full time and 20% (*n*=32) worked 20 hours or less a week.

The majority (70.6%, *n*=113) had content about screening adolescents in their nurse practitioner programs. The remainder, 28.5% (*n*=45), reported they had no education on this content.

Table 4.1 Sites of Employment *n*=148

Location	n (%)
Private practices, medical care	79 (53.4%)
Hospital, specialty needs	21 (14.2%)
Publically funded clinics	22 (14.8%)
Emergency centers	7 (4.7%)
Urgent care centers	5 (3.4%)
Retail clinics, store owned	3 (2.0%)
School Based centers	3 (2.0%)
Private practice mental health	1 (0.7%)
US Military	1 (0.7%)
Free clinic	1 (0.7%)
Occupational health clinic	1 (0.7%)
Newborn clinic	1 (0.7%)
Department of Health, ObGyn	1 (0.7%)
University/college health center	1 (0.7%)
Doctor owned retail clinic	1 (0.7%)

The knowledge, insights or experiences of nurse practitioners were considered to be additional factors that prompt these providers to screen for depression. Information that they obtain from the adolescent or the family may prompt them to consider the diagnosis of depression. This might prompt them to screen the teenager for the presence of depression. Two open ended questions, one asking what adolescent factors prompt you to screen adolescents and the other asking what family factors prompt you to screen, were asked. Participant responses were categorized using content analysis (Table 4.2 and Table 4.3). Content analysis is a qualitative research method where the researcher examines all the responses provided and then categorizes the responses by content as determined by the researcher (Munhall, 2007).

Table 4.2 Adolescent Factors that Prompt Depression Screening (*n*=156)

Adolescent Factor Categories
Physical demeanor: body cues, crying, withdrawn, hygiene concerns, poor posture, poor eye contact.
Nutritional concerns: underweight or overweight, weight changes, decreased appetite, eating problems, anorexia, bulimia.
Activity changes: lack of interest in activities.
Friendship issues: changes of friends, no friends, non social.
Reports: of depression, states I am sad; unhappy; stated anxiety; suicide attempt; self harm issues.
School problems: poor grades, drop in grades; decreased school participation; missing school; report of problems from school.
Behavior: Aggressive, violent, defiant, oppositional; Legal problems, incarceration.
Fatigue, sleep concerns: where medical cause has been ruled out; poor sleep, insomnia and hypersomnia.
Risk taking: alcohol, drugs, tobacco, sex.
Dynamics with family, dysfunction in family; Child Protective Services involvement; interaction with parents, foster home placement.
Abuse issues: history of abuse; physical, sexual or emotional abuse; Domestic violence.
Victim of bullying
Sexual issues: same sex attraction; gender issues; STDs, pregnancy; early onset sex.
Socioeconomic status; poverty; homelessness.
Practitioner intuition of signs and symptoms: gut feeling; instincts.

Table 4.3 Family Factors that Prompt Depression Screening (*n*=150)

Family Factor Categories
Lack of psychological or emotional support; unstable family support;
Neglect issues: lack of supervision; poor compliance with medical care; lack of concern when an emergent situation occurs
Too much responsibility. Family has high expectations of the teen. Over scheduling.

Table 4.3- Continued

Family Factor Categories
Parenting issues: Hyper controlling parents. Parents lack of interest in answering practitioners' questions. Parents who make jokes about child's behavior or choices in clothes or activities. Adolescent does not speak for self; parents do all the talking
Family history of depression or mental illness; family history of suicide.
Health issues: Chronically ill or seriously ill family members. Illness in the teenager: neurological problems, diabetes, asthma in teen, cancer, bone marrow transplants. Teen's history of previous mental illness problems.
Abuse issues: History of sexual, physical or psychological abuse; domestic abuse.
Dysfunctional interactions between family members during visit; poor parental and sibling relationships; poor communication with parents
Change in family: Drama, turmoil in family, changes in family dynamics, sibling moves out of home; divorce; separation; marital problems; custody battles.
Living arrangements: Blending of families; multi-family households; dual households for teen. Foster home placement; more than 3 children in household; parents with multiple partners.
Pregnancy: Sibling or teen pregnancy. Living with boyfriend/ or girlfriend.
Loss of parent or family member: Death in family; Deployment; parent in jail;
Low socioeconomics, poverty. Poor environment
Practitioner assessment; elimination of physical causes for chief complaint of the visit; gut feeling
Low socioeconomics, poverty. Poor environment
Practitioner assessment; elimination of physical causes for chief complaint of the visit; gut feeling

The participant responses represented a comprehensive overview of the complex interacting factors that can potentially contribute to adolescent depression. Most participants provided two to six responses to these questions.

4.3.1.2 Attitudes

The attitudes of FNPs and PNPs consisted of whether they felt screening was a part of their role, whether these nurse practitioners perceived the family or the patient accepted the possibility of depression and whether the family and patient would agree to treatment. Ranging from strongly agree to strongly disagree, their response rates are displayed in Table 4.4.

Table 4.4 Frequency of Attitude Responses

Statement (n)	Strongly agree	Agree	Disagree	Strongly disagree
Depression screening is a part of my job (*n*=159)	74 (46.3%)	74 (46.3%)	7 (4.4%)	4 (2.5%)
I find the adolescent and his family accept the diagnosis of depression	5 (3.1%)	106 (66.3%)	34 (21.3%)	7 (4.4%)

Table 4.4- Continued

that I make (*n*=152)				
I find that the adolescent and his family agree to treatment for the diagnosis of depression *(n*=152*)*	2 (1.3%)	111 (69.4%)	34 (21.4%)	5 (3.1%)

Over 90% of the sample recognized depression screening to be a part of their job. The majority also believed the adolescent and family would accept the diagnosis and treatment suggested.

An attitude score was calculated for each respondent by summing ratings of the three items 23, 34 and 35 from the survey. With a potential range of 3 of 12, the scores ranged from 4.00- 12.00 (*M*=8.83, *SD*=1.37). The scores clustered around 9.00, and 10.00, representing high positive attitudes, 30.6% (*n*=49), each (Figure 4.2).

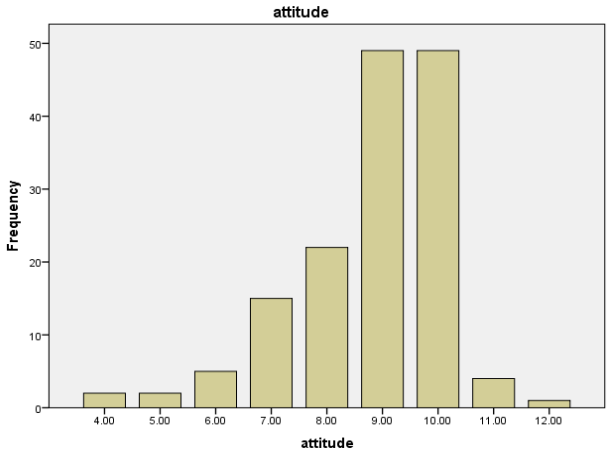

Figure 4.2 Attitude Score

4.3.1.3 Perceived norms

The perceived norms are reflected in the extent to which nurse practitioners feel peer pressure to perform depression screening. This was operationalized by asking whether they think their colleagues screen adolescents for depression or whether their professional organizations recommend screening adolescents for depression (Table 4.5).

Table 4.5 Frequency of Perceived Norm Responses

Statement (n)	Strongly agree	Agree	Disagree	Strongly disagree
My professional peers/colleagues screen adolescents for depression (*n*=156)	22 (13.8%)	84 (52.5%)	41 (25.6%)	9 (5.6%)
My professional organization recommends screening adolescents for depression (*n*=152)	52 (32.5%)	79 (49.4%)	18 (11.3%)	3 (1.9%)

A perceived norm score was calculated for each respondent, by adding data from the above two questions, items 25 and 26 on the survey. The potential range was 2.00 to 8.00 and the actual scores ranged from 2.00 to 8.00 (*M* =5.96*; SD*=1.26). (Figure 4.3). Over 50 participants believed their peers did not screen for depression and a small group did not believe their professional organizations recommended screening for depression.

4.3.1.4 Actual control

Actual control represents the extent to which a person has the skills and resources to perform a given behavior. Nurse practitioners responded to survey items 24, 29, 30 and 33 as to whether they have methods to effectively treat adolescents for depression, access to instruments to screen adolescents for depression, and administrative support for screening adolescents for depression. The participants also responded to a question about whether someone else did the screenings in their practices (Table 4.6).

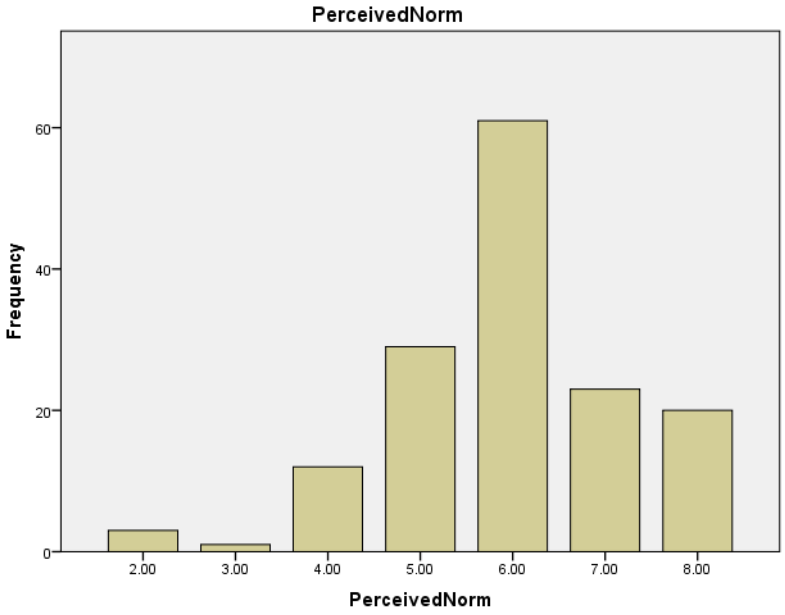

Figure 4.3 Perceived Norm Scores

An actual control score was calculated by adding each of these items for each respondent and reverse scores were calculated for item 33. The potential range of scores was 4.00 to 16.00. The scores ranged from 4.00 to 15.00 (*M*=9.67*; SD*=2.29). (Figure 4.4).

Table 4.6 Frequency of Actual Control Responses

Statement (n)	Strongly agree	Agree	Disagree	Strongly disagree
I have methods to effectively treat adolescents for depression. (159)	18 (11.3%)	63 (39.4%)	53 (33.1%)	25 (15.6%)
I have access to instruments to screen adolescents for depression. (155)	14 (8.8%)	72 (45%)	55 (34.4%)	14 (8.8%)
I have administrative support for screening adolescents for depression (159)	22 (13.8%)	81 (50.6%)	42 (26.3%)	14 (8.8%)
Someone else screens adolescents for depression. (158)	48 (30%)	75 (46.9%)	30 (18.8%)	5 (3.1%)

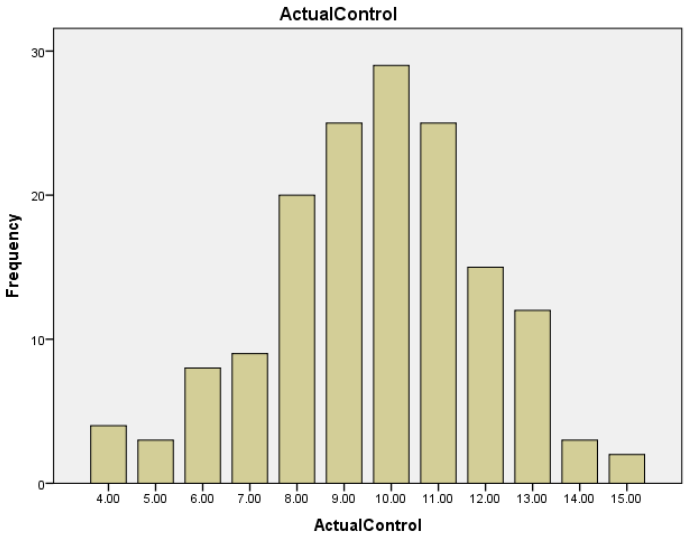

Figure 4.4 Actual Control Scores

4.3.1.5 Perceived behavioral control

Perceived behavioral control is defined as people's perceptions of their ability to perform a behavior, that includes internal and external factors, feelings that the behavior can be performed and the belief that the environment is conducive to performing the behavior. This construct was operationalized by the items listed in Table 4.7.

Table 4.7 Frequency of Perceived Behavioral Control Responses

Statement (n)	Strongly agree	Agree	Disagree	Strongly disagree
I have enough time to screen adolescents for depression during my visits. (159)	17 (10.6%)	81 (50.6%)	57 (35.7%)	4 (2.5%)
I have been adequately trained in screening adolescents for depression. (159)	10 (6.3%)	78 (48.8%)	62 (38.8%)	9 (5.6%)
My job setting is conducive to screening adolescents for depression. (159)	15 (9.4%)	90 (56.3%)	48 (30%)	6 (3.8%)
The adolescents' physical problems distract me from considering the diagnosis of depression (156)	9 (5.6%)	109 (68.1%)	37 (23.1%)	1 (0.6%)
Discussion r/t depression comes up in my visits with adolescents (156)	11 (6.9%)	80 (50%)	60 (37.5%)	5 (3.1%)

Table 4.7- Continued

Statement (n)	Strongly agree	Agree	Disagree	Strongly disagree
I am competent to screen adolescents for depression 157)	19 (11.9%)	94 (58.8%)	42 (26.3%)	2 (1.3%)

A perceived behavior control score was calculated for each respondent., which included adding the totals for items 27, 28, 31, 32, 36, 38 and 39. Item 36 was reverse scored (Figure 4.5). The potential range of scores was 7.00 to 28.00. Scores ranged from 10.00 to 26.00. The number of subjects was 134 *(M*=18.3*; SD*=3.08*),* suggesting a sense of perceived behavioral control*.* Adolescents' physical problems and insurance reimbursement were the primary deterrents in this construct.

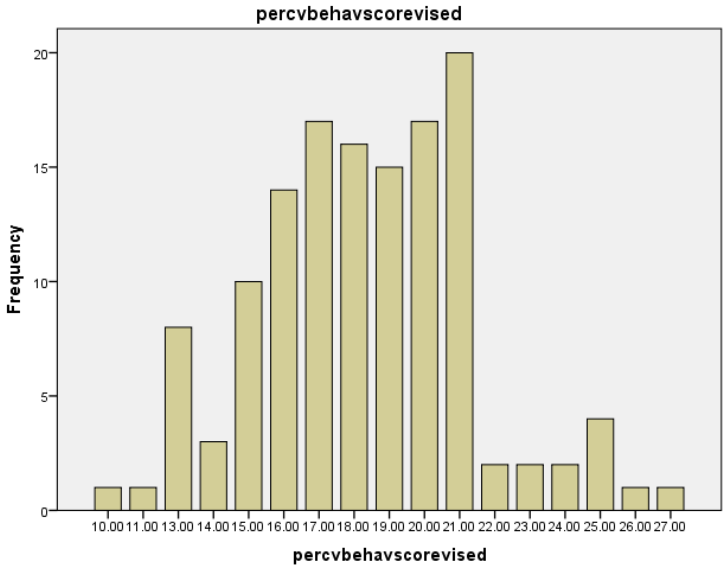

Figure 4.5 Perceived Behavior Control Scores

4.3.1.6 Screening actions

Frequencies were calculated to describe the nurse practitioner screening actions. The five types of visits (athletic, immunization, wellness, episodic, and emergency) that nurse practitioners provided and the percentages of those who responded yes to the type of visit were represented by items 9-18 of the survey (Table 4.8). Although 80% reported they provide athletic physicals, 46% of those practitioners did not screen for depression during an athletic physical.

While 88.8% reported they provide episodic visits for adolescents, 49.4% reported they do not screen for depression during those visits. Almost half provide immunization visits, but only about half of those screen for depression during those visits. Well checks were provided by 76.9% of the nurse practitioners, and 13.1% reported they do not screen for depression during a well check visit. Emergency visits were provided by 40.6% of these practitioners, and 29.4% of those providers did not screen for depression at those visits.

Table 4.8 Provision of Screening at Various Types of Visits

	Provide Visit (*n*)%		**Screen during Visit (*n*) % of *Yes* visit responses**	
	Yes	**No**	**Yes**	**No**
Athletic visits	128 (80%)	32 (20%)	55 (34.4%)	74 (46.3%)
Immunization visits	78 (48.8%)	79 (49.4%)	8 (5.0%)	77 (48.1%)
Wellness visits	123 (76.9%)	35 (21.9%)	105 (65.9%)	21 (13.1%)
Episodic visits	142 (88.8%)	17 (10.8%)	67 (41.9%)	79 (49.4%)
Emergency visits	65 40.6%	94 58.4%	28 17.5%	47 (29.4%)

A screening behavior score was calculated for each respondent. The total number of visits in which a provider screens adolescents (items 10, 12, 14,16, and 18) were divided by the total types of visits which the nurse practitioner provides (items 9, 11, 13, 15, and 17) to the adolescents (*M*=.4859, *SD*=.382).

The frequencies for screening adolescents for depression and the determination to screen all adolescents or just specifically targeted adolescents was represented by item 19 (Table 4.9). Usually nurse practitioners screen targeted adolescents and do not screen all adolescents they see. However, 11.9% reported they do not screen adolescents at all. This information provides information related to Wintersteen's discussion (2011) on universal or targeted

screening. This research focused on the place of universal screening for suicide or screening only when cues are present. These nurse practitioners most often screen targeted teenagers.

Table 4.9 Inclusion Criteria for Screening *n*= 160

Targeted	*n* =99 (61.9%)
All adolescents	*n*=42 (26.3%)
No screening	*n*=19 (11.9%)

The findings and management of positive adolescent depression screening were represented by items 40-43 of the survey (Table 4.9and 4.10). Eigtheen (11.3%) reported they do not screen; while 48.8% reported they rarely find positive signs of depression, 35% reported they usually do find signs of depression when they screen.

Table 4.10 Frequency of Positive Screening Results

	***n* (%)**
Do not screen	18 (11.3%)
Never	2 (1.3%)
Rarely	78 (48.8%)
Usually	56 (35%)
Always	1 (0.6%)

The majority of the nurse practitioners rarely or never prescribe antidepressants (79.4%) but are more apt to refer the adolescent for psychotherapy or to a mental health specialist (Figure 4.6; 4.7; 4.8), with 23.7% never/rarely refer for psychotherapy and 30% never/rarely refer to psychiatric mental health specialists.

Table 4.11 Frequency of Response to Positive Depression Screening

	Always	**Most of the Time**	**Rarely**	**Never**
I prescribe antidepressants (*n*= 160)	0	33 (20.6%)	57 (35.6%)	70 (43.8%)
I refer to psychotherapy (*n*= 160)	69 (43.1%)	53 (33.1%)	17 (10.6%)	21 (13.1%)
I refer to psychiatrists, psychologists or psychiatric mental health nurse practitioners for management. (*n*= 160)	68 (42.5%)	62 (38.8%)	16 (10%)	14 (8.8%)

4.3.2 *Second Research Question*

The second question asked in this study was: What are the relationships among the background factors of age and length of time in practice, attitudes, perceived norms, perceived behavioral control, actual control and the behavior of screening adolescents for depression in nurse practitioners? Spearman rho correlations were calculated using SPSS (Table 4.11). Calculations were performed on all responses, resulting in the varying number of participants for each pair of variables, because pairwise deletion was used.

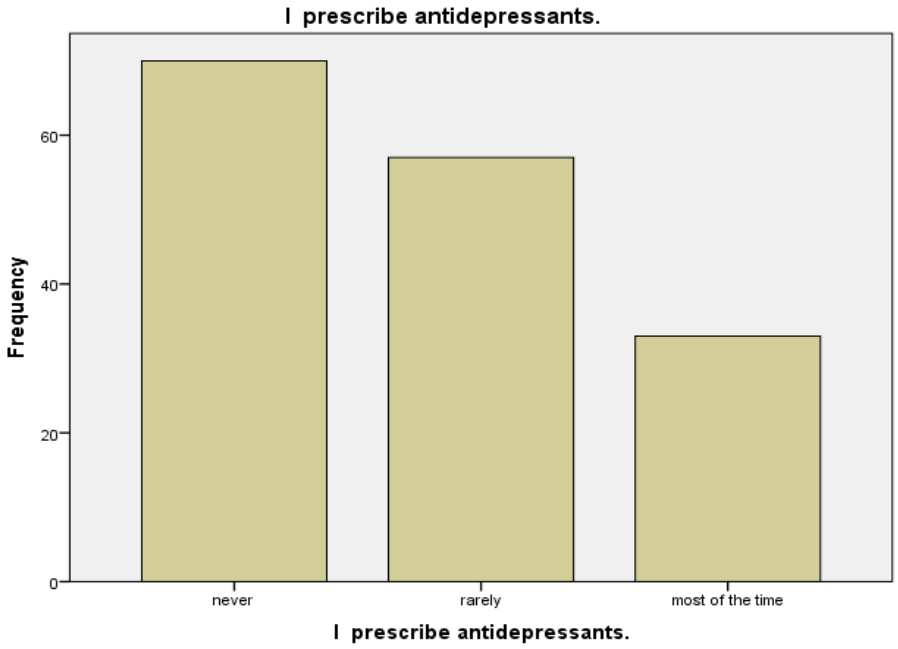

Figure 4.6 Prescribe Antidepressants

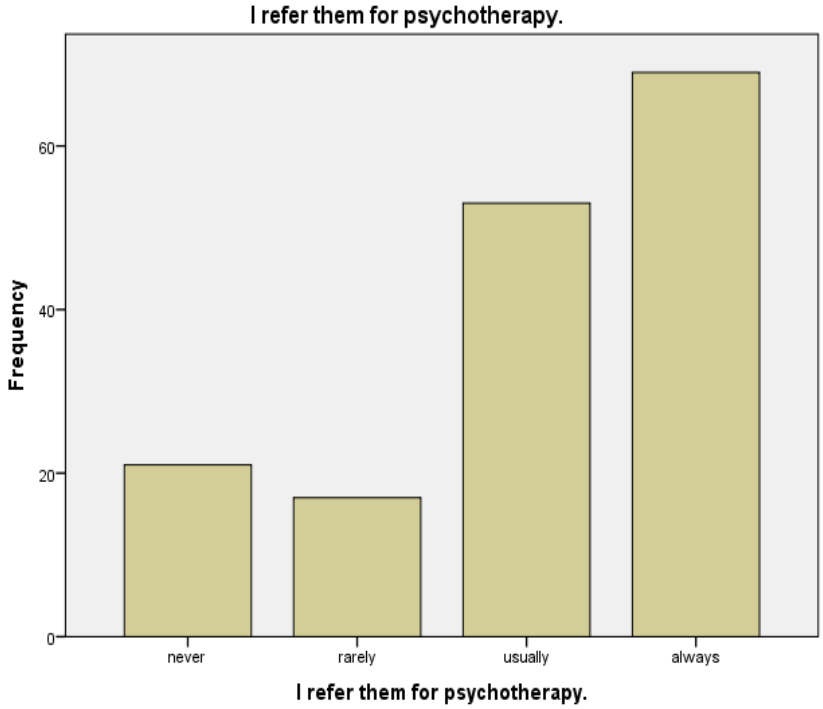

Figure 4.7 Refer for Psychotherapy

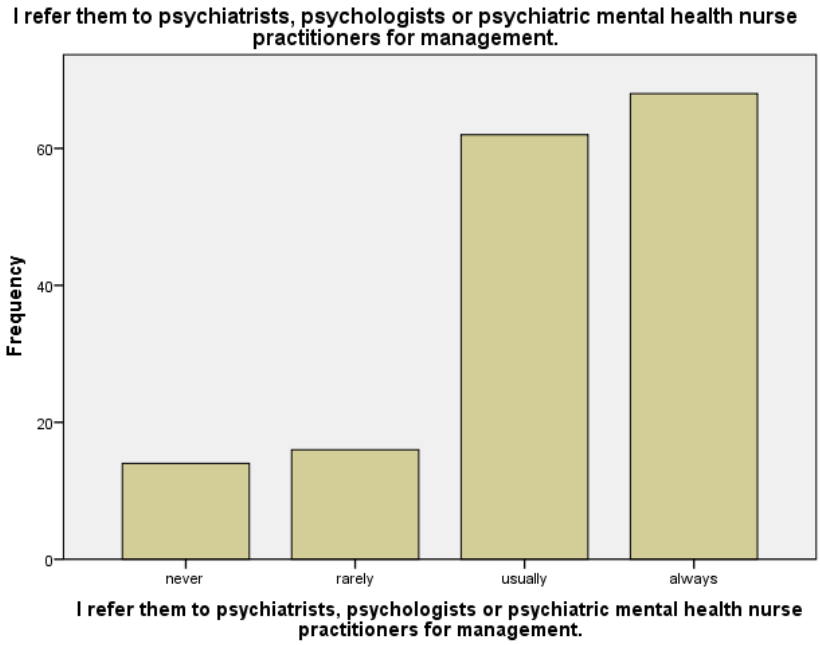

Figure 4.8 Refer to Mental Health Specialists

As expected, age and years in practice were strongly correlated; however age had no significant correlation with any of the other variables. Significant relationships were found between each construct except actual control and time in practice, which had no statistically significant correlations. Statistically significant moderate to strong relationships were found between screening behavior and attitude, perceived norms, actual control, and perceived behavior control. Time in practice was found to have a statically significant, but weak correlation with attitude and perceived norm (*p=.05*). In addition, attitude, perceived norm, actual control and perceived behavior control had significant moderate correlations (*p* = .01) (Nunnally & Bernstein, 1994).

Table 4.12 Spearman's rho Correlations Among Constructs

	Screen Behavior *n*=150	**Age *n*=159**	**Time in Practice *n*=160**	**Attitude *n*=142**	**Perceived Norm *n*=141**	**Actual Control *n*=145**	**Perceived Behavior Control *n*=129**
Screen Behavior	1.00						
Age	.146	1.00					
Time in Practice	.243**	.604**	1.00				
Attitude	.330**	.054	.186*	1.00			
Perceived Norm	.425**	.089	.201*	.434**	1.00		
Actual Control	.386**	-.012	.120	.386**	.483**	1.00	
Perceived Behavior Control	.485**	.150	.270**	.437**	.404**	.648**	1.00

**p*=.05; ***p*=.01 , Correlations: <.3 weak, .3-.4 moderate, >.4 strong

4.3.3 Third Research Question

The third question asked in this study was: What instruments do pediatric and family nurse practitioners use to screen adolescents for depression during visits with adolescents?

The data were collected by providing a list of available instruments. The participants were asked to select from the list and to add others to the list. A total of 60 nurse practitioners (40.4%) reported that they used no screening instrument (Table 4.12). However, 13 of these, who stated

they used no instruments, also reported that they do use subjective measures such as the SUD or the HEADSS mnemonic to assess the adolescent. The respondents selected from two to five different instruments. The selection of only one instrument occurred in 44 of the respondents with the PHQ receiving the most choices (*n*=10). The BDI was second most selected instrument that was chosen by itself (*n*=6). The SUDS is used solely by 23 of the respondents but is used in conjunction with another instrument in 18 participants. The HEADDSS was used alone in 13 occurrences, but eight participants used it in conjunction with another instrument.

Table 4.13 Frequency of Screening Instruments Used

Instrument	***n* (%)**
Subjective units of distress	50 (32.1%)
Home and Environment, Education and Employment, Activities, Sexuality and Suicide and Depression (HEADSS)	25 (16%)
Patient Health Questionnaire-9	22 (14.1%)
Beck Depression Inventory	17 (10.9%)
Pediatric Symptom Checklist	13 (8.3%)
Zung Depression Scale	10 (6.4%)
Guidelines for Adolescent Preventive Services	7 (4.5%)
Children's Depression Scale	6 (3.8%)
Children's Depression Inventory	5 (3.2%)
Centers for Epidemiological Studies of Depression	3 (1.9%)
Texas Health Steps Mental Health Checklist (Texas Department of State Health Services, 2007).	2 (1.3%)
Quick Inventory for Depression Scale	2 (1.3%)
Diagnostic Interview Schedule for Children	1 (0.6%)
Bright Futures Questionnaire (American Academy of Pediatrics, 2002).	1 (0.6%)
Burns Depression Inventory for Older Adolescents (Burns, 1999)	1 (0.6%)
Rapid Assessment for Adolescents preventive Services (RAAPS) (Yi, Martyn, Salerno, & Darling-Fisher, 2009).	1 (0.6%)
Reynolds Adolescent Depression Scale	1 (0.6%)
Kandel Depression Scale	0

Of the instruments listed on the survey, none was used by more than 50 of the participants. These pediatric and family nurse practitioners most frequently selected the SUD, HEADSS, the PHQ-9 and the Beck Depression Inventory to screen for depression in adolescents.

4.4 Summary

In this chapter, results of the statistical analysis of this descriptive, correlational study were provided. The results were based on a small sample size of 166 family and pediatric nurse practitioners who provide care to adolescents. Significant correlations between length of time in practice, attitudes, actual control, perceived norms, perceived behavioral control and the behavior of screening adolescents for depression were found. The nurse practitioners who reported using a screening instrument used a diverse group of instruments.

CHAPTER 5

DISCUSSION

5.1 Introduction

In this chapter, the study results obtained from the statistical analyses and sample descriptives are interpreted and further discussed in a broader perspective. All major findings from the study are interpreted in light of current research and publications. Limitations of the study are presented with their meanings for the interpretation of study results. The conclusions are stated and address the questions of "so what?" The implications of this study for nursing are discussed. Finally, specific recommendations are provided for additional research.

5.2 Sample

A convenience sample was obtained by surveying family and pediatric nurse practitioners on the Texas Board of Nursing mailing list. The nurse practitioners were licensed to practice in Texas in their specialty areas as advanced practice registered nurses. Originally, 6854 NPs who were eligible to participate were mailed invitation letters and provided with the web based link to a survey which explored adolescent depression screening practices among pediatric and family nurse practitioners. The response rate for this study was 2.44% *(n*=166*).* This consists of 36.14% *(n*=60*)* pediatric nurse practitioners and 63.86% *(n*=123) family nurse practitioners. The average age of the participants was 45.8, which is comparable to the sample in other similar studies (Burns, Camaione, &Chatterton, 2000; Reeve, Byrd and Quill,2004). The participants were experienced nurse practitioners with an average of 9.5 years of experience. The fact that they received their nurse practitioner education almost 10 years ago may have influenced some of findings presented later. Though this sample size is small, the nurse

practitioners were practicing across the state of Texas in 75 different counties in both urban and rural areas of the state. Geographically, the northeast, the panhandle, central Texas, the valley, and the southwestern areas of the state were each represented in this sample.

Although no research is available that examined the specific mental health concerns of this study, two studies were found that used a survey method and looked at practices of nurse practitioners. Reeve, Byrd and Quill (2004), examined Texas nurse practitioners' health promotion attitudes and practices. They obtained their sample from the Texas Board of Nursing mailing list, but had a larger sample size of 442. Their participants had a similar age as this study, though specific ages were not provided since they reported ages as ranges. They did not delineate the specific roles of the nurse practitioners in the study or the geographic area where the nurse practitioners worked. They did not discuss the timeframe for their study, but their method for acquiring data by mailed survey may have contributed to the larger sample. In another study, Burns, Camaione, and Chatterton (2000) conducted a national survey of 1000 randomly selected adult NPs, from the American Nurses Credentialing Center mailing list, to determine if patients were routinely counseled about physical activity. They collected data over four months and had a final sample size of 396 with a 39% response rate from adult nurse practitioners working in 43 different states across the United States. The ages of their sample ranged from 25 to 74 with a mean of 44.5 years, somewhat similar to this study. Their average length of practice of 7.8 years was somewhat less than this sample's work experience.

5.3 Interpretation of Research Questions

In studies that examine issues related to provider care, most of the research literature discusses the Theory of Reasoned Actions' constructs of attitude, perceived behavioral control and perceived norms and their relationship to a behavior (Kleier, 2004; Reeve, Byrd, & Quill, 2004; Edwards, et al., 2001). Studies that focused on actual control studies were not found. Fishbein and Ajzen (2010.p.68) stated that "when people intend to perform a behavior they are more likely to persist when they believe they are capable and have the resources to do so." The

model of this study reflects this view on attitude, perceived norms and perceived behavioral norms. Actual control is viewed as having a primary affect on perceived behavioral control and a secondary affect on behavior.

5.3.1 *First Question*

Question 1 asked: What are the background factors, attitudes, perceived norms, perceived behavioral control, and actual control factors affecting screening of adolescents for depression by primary care nurse practitioners? Though no study had looked at these constructs in nurse practitioners' adolescent depression screening behaviors, Klein (2005) supported the constructs of the Theory of Reasoned Action as positively affecting behavior in a study that examined nurse practitioners' intention to teach testicular self examinations to young men.

5.3.1.1 Background factors

As the Theory of Reasoned Action and the model for this study indicates, background factors are individual, social and cultural variables of the nurse practitioner, adolescents and their families that may influence the nurse practitioner's behavior of screening adolescents for depression. These factors were represented in this study by selected demographic variables of pediatric (PNP) and family (FNP) nurse practitioners such as age, place of work, length of time in the professional role, screening education and factors presented by the adolescent or family that prompt depression screening.

The majority of these nurse practitioners (53.4%) worked in private medical practices, although 14.2% worked with hospital specialty needs such as neurology. Whether these reflect clients who only pay with private insurances is unknown, but if so, it is surprising that only 14.8% practiced in publically funded clinics and 0.7% in a free clinic. The recent move to retail clinics was reflected by 2% who worked in store owned clinics and 0.7% who worked in doctor owned retail clinics.

Of interest is that only a few of the participants worked in school based centers (2%) and university or college health centers (0.7%), as these locations might provide one of the best opportunities to screen adolescents for depression. An ideal sample would have included more NPs from school settings, because recent evidence indicates that most adolescents enter the mental health care through their school (Farmer et al., 2003).

Teens might seek emergency care even if they do not routinely seek medical care. In this sample, 4.7% of the NPs worked in emergency centers and 3.4% worked in urgent care centers. Scott et al. (2006) reported a large number of adolescents who seek care in the emergency room have moderate depression. Perhaps among the non-respondents were those PNPs and FNPs who work for the prison or jail system, another potentially important place to find depression. Scott et al. reported the juvenile justice system was the second most common point of entry for youths between ages of 14 and 16 years. The breadth of the employment locations of the NPs in the sample indicate that, although a small number, the NPs represented a cross-section of settings and these settings were key places to see adolescents.

In contrast to the majority of the nurse practitioners, 28.5% reported they had no content about screening adolescents for depression in their nurse practitioner programs. Perhaps this is due to the time period when these nurse practitioners attended their practitioner programs. The recommendations to screen adolescents for depression were only established in 2009 (Williams, et al, 2009) and the mean length of time in practice for this group was 9.5 years.

Yet, even without coursework in screening, these nurse practitioners did have experience as the range of their professional practices ranged from less than 3 months to 33 years. The insights, experience, and knowledge gained from their jobs and from continuing education programs represent a form of education, which provided a background for the way they assess and listen to the adolescent and his family. The information the family and the adolescent may provide in a visit is able to prompt the PNP and FNP to consider the diagnosis of depression and the need to screen for this problem. The adolescent and family factors identified by the PNP and

FNP respondents are factors for which research evidence exists. The responses reflected current knowledge of factors that may lead to a diagnosis of depression. For example, physical symptoms were identified by the participants and are consistent with the research literature that addresses frequent presentation with somatic complaints and other signs and symptoms of depression in this age group (APA, 2000; Elmquist, Croarkin & McClinton, 2010; Harper, Marks & Nelson, 2002). These nurse practitioners recognized the risk factors for depression that may heighten stress and lead to altered mental health. Topics such as abuse and bullying (Moore, 2002); poverty (Najman, et al., 2010); stress and family changes, such as parental divorce or death (Hazel, 2008); school problems (Li & Lerner, 2011); risk taking behaviors, such as sexual activity, alcohol and drug use (Brown, et al., 2010); eating disorders (Rawana, Morgan, Nguyen, & Craig, 2010); and violence (Brandt, Ward, Dawes & Fisher, 2005) are often cited by researchers as risk factors for depression and were listed by the FNPs and PNPS as concerns that prompted screening for depression.

Their responses also represented knowledge of theories of normal development, especially the development of personal identity and cognitive development issues, such as using rules to handle life events that occur in adolescents (Erikson, 1959; Piaget, 1983). Respondents were sensitive to family and peer dynamics of lacking friendships, poor communication and family strife noted by parenting issues, such as controlling styles and high expectations of the teenager (Field et al., 2002; Hunter, Katz, Shortt, Davis, Leve, Allen, & Sheeber, 2011). The list of factors represented awareness among these nurse practitioners of what might indicate depression or what might spark a depressive episode. Almost all of the nurse practitioners identified genetic issues of depression within the family, adolescent eating disturbances, and a history of substance abuse in the family or adolescent as a risk factor for depression in the adolescent (Levinson, 2006; Peiponen, Laukkanen, Korhonen, Hintikka, & Lehtonen, 2006).

The analysis of the list of factors revealed an unexpected omission of gender, as the frequency of depression in teenage girls is well documented (Uddin, et al., 2010). Perhaps this

consideration was implicit in the factors these nurse practitioners described, but Logsdon (2004) reported that girls' depression surpasses boys at adolescence and that girls might be reticent to disclose information about their moods to their health care provider, thus indicating the need for the health care provider to suspect depression in this group of adolescents. Another factor that was expected but was not revealed was the issue of immigration. Despite concerns and struggles to enter into the United States along the Texas-Mexico border, language barriers, and this state's large Hispanic population, NPs did not include immigration issues or the specific stressors that living in the United States might bring for the teenager (Garcia & Duckett, 2009; Melnyk, Jacobson, O'Haver, Small, & Mays, 2009). Olvera (2001) reported that Hispanic (predominantly Mexican American) and mixed-ancestry adolescents displayed a significantly higher risk of suicidal ideation compared to Anglo peers, even when socioeconomic status, age, and gender were controlled. None of these providers spoke to any issues related to ethnicity or race as heightening their concern for screening adolescents for depression, although the research supports need for such concerns, as for example in the care of Asian youth. Asian young people may be viewed by providers as a model culture and depression may be missed in this group due to their naturally agreeable communication and manner of respect they show to adults (Choi, 2005).

The factors that prompt these nurse practitioners to screen adolescents are consistent with existing research (Buka, Monuteauz, & Earls, 2002; Fergusson & Woodward, 2002; Zalsman, Brent, & Weersing, 2006). In the final analysis, several wrote that they just had a gut feeling or an instinct that suggests the adolescent is depressed, especially when no physical cause for the purpose of the visit can be established and that instinct leads to their screening for depression. Perhaps this feeling also may outweigh the need to use a screening instrument for some of these providers. Their view of relying on their instincts may be supported by the work of Benner (1984; 1987) as she discussed the role of intuition, understanding without a rationale, in nurses. She hypothesized that an expert nurse no longer relies on principles to connect an understanding of

the situation to an action. In their review of Benner's theory, Lyneham, Parkinson, and Denholm (2009) supported the idea that experience is a powerful component of practice and that it is essential to the development of expertise.

5.3.1.2 Attitudes

The attitude is the positive or negative view one has of a situation or behavior. Fishbein and Ajzen (2010) in the TRA stated that the attitude is affected by the background factors and influences whether one performs a behavior such as screening adolescents for depression. In a study that looked at female students' intention to engage in premarital sexual relations, Chitamun and Finchilescu (2003) found a strong correlation between attitudes and premarital sexual relations (α =.90). Other studies conducted with samples of health care providers have supported the relationship of attitude to behaviors. Kleier's study (2004) examined nurses' attitude toward teaching testicular self examination to males and correlated attitudes to the behavior of teaching testicular self -examinations (α=.22, p <.01). Reeve, Byrd and Quill's study (2004) on health promotion behaviors of nurse practitioners resulted in a moderate association(α=.47, p <.01) between attitude of positive view toward preventing disease and their behaviors. Edwards and colleagues (2001) reported a correlation between attitude toward pain relief, how often to give opioids, opiod dosing, and opioid across the lifespan and the action of using opiods in hospital nurses and α=.22, p < 0.01 in their study on opioid administration by nurses.

Dividing the scale into two components, agree or disagree, the majority of the nurse practitioners reported positive attitudes toward screening. Most participants agreed that the adolescent and his family accepted the diagnosis of depression and those who found that the adolescent and his family agreed to treatment for the diagnosis of depression were a majority, also. Conversely, 6.9% felt that depression screening was not a part of their job, 25.7% felt the family did not accept their diagnosis and 24.5% felt the family does not agree to treatment for the diagnosis of depression. These negative attitudes might make it arduous for the nurse practitioner to attempt to screen for depression and establish a diagnosis. However, this study demonstrated

an overall positive attitude toward screening with relatively high attitude scores (*M*=8.83, with possible of range of 4-12).

5.3.1.3 Perceived norms

In the TRA model for this study, perceived norms are perceived social pressure to engage or not to engage in a behavior that leads to the behavior of screening adolescents for depression. This construct may include whether FNPs and PNPs believe their peers perform this behavior and whether other important others, such as professional associations, believes they should participate in this behavior. In a study that examined nurses' intention to administer opioid drugs to their patients, Edwards and colleagues (2001) found that nurses believed that patients, nursing colleagues, friends, relative and medical staff thought they should administer opioids as needed to patients with pain. The nurses in the Edward et al (2001) study were more likely to comply with the wishes of patients and medical staff than the opinions of the colleagues and patients' families, with a small relationship (r=0.29, p <.001), but that their perceived norm did lead to their intention to administer opioids to patients. The affect of perceived norms on behavior was also supported with a moderate relationship (r= .36, p= .001) in a study on nurses' teaching testicular self examination to young males (Kleier, 2004).

In this study, although over half of the nurse practitioners agreed with both of these statements, nearly a third believed that their peers did not participate in screening for depression. A smaller group (13.2%) indicated that their professional organizations had not recommended screening adolescents for depression. These findings seem to represent a lack of education, especially related to their professional organizations. Both the American Academy of Nurse Practitioners and the National Association of Pediatric Nurses and Practitioners recommend screening adolescents for depression (The American Academy of Nurse Practitioners, 2007; Melnyk & Moldenhauer, 2006; National Association of Pediatric Nurses and Practitioners NAPNAP, 2007).

5.3.1.4 Actual control

In the TRA and in this study's framework, actual control is the extent to which a person has the skills, resources and other prerequisites needed to perform a given behavior (Fishbein & Ajzen, 2010). Actual control affects both perceived control and the behavior of screening adolescents for depression. This construct examined whether the nurse practitioners felt they had methods to effectively treat adolescents for depression, access to instruments to screen adolescents for depression, administrative support for screening adolescents for depression and whether someone else screens adolescents for depression in their practice. No literature was found that specifically addressed actual control because actual control is most often studied through its affect on perceived behavioral control (Fishbein & Azjen, 2010)

Responses to actual control were fairly split with half in agreement and half disagreeing with availability of depression treatment and instruments to screen for depression. For the the 47% who did not have access to instruments , the question must be asked of how they screen if they do not have instruments with which to screen. Perhaps they do not have instruments, because they are not interested in screening, they do not have a way to effectively treat the adolescent for depression, or they do not feel competent to screen. Perhaps, these FNPs and PNPs rely on their intuition for diagnosing depression. Seeking the answers to these speculations could be the topic for future studies.

5.3.1.5 Perceived Behavioral Control

In the TRA and the model for this study, perceived behavioral control means a person's perceptions of his ability to perform a behavior, that includes internal and external factors, such as a feeling that the behavior can be performed and belief that the environment is conducive to performing the behavior. In the model for this study, if one has a high level of perceived behavioral control, this should lead to the behavior of screening. Reeve, Byrd and Quill (2004) in their study, found that Texas nurse practitioners who have internal and external resources of perceived behavioral control have greater intentions of engaging in health promotion

activities with their patients (r=.431, p <.01). The findings provided support for the relationships of the Theory of Reasoned Action.

The majority of participants reported having the time, training, competence, and type of job settings to screen for depression, but were not reimbursed by insurance for depression screening These findings are in contrast to those of a recent study of family physicians (Schumann, Schneider, Katnert, Lower, & Linde, 2011). The family physicians considered the process of diagnosing depression as time consuming and as requiring multiple contacts. They reported that, if they felt rushed, they did not ask about depression. Cronholm, Barg, Pailler, Wintersteen,, Diamond, and Fein (2010) conducted a study with emergency department physicians. The physicians were ambivalent about screening for depression in the ED although they recognized that the ED may be the only source of care for most teenagers and realized that depression may contribute to their reason for the emergency visit. Cronholm et al. also reported lack of time, and training, the acuity of the presenting complaints, and the bustling nature of the ED as obstacles that affect ED physicians' screening behaviors. The obstacles they identified are internal and external perceptions of behavioral control.

The PNP and FNP that indicated a lack of training and competence for screening represent an opportunity for continuing education. Policy changes must address the fact that 78% find that insurances do not reimburse them for screening adolescents for depression.

5.3.1.6 Screening Actions

Opportunities to screen adolescents occur with each contact the provider has with the teenager and nurse practitioners provide various types of visits to patients, but nurse practitioners may be missing some of these opportunities. Well check visits were done by 76.9% of the respondents and most NPs screened for depression during these visits. However, not all adolescents receive well checks. During other types of visit, the NPs screened less than half the time. The well check exam is the most common time when adolescents are screened. In other

visits with the teenager, nurse practitioner could take advantage of the visit to assess for this problem. It is not known from this data the reasons for decisions to screen at each type of visit.

Researchers for The United States Preventive Task Force (Williams, et al., 2009) reported that screening for adolescent depression is recommended if resources for appropriate care are available for the treatment of depression. In this study, most (>85%) PNP and FNP screened for depression, which is positive. Despite screening, nearly half indicated that they never or rarely find positive signs of depression. Another group (35%) replied that they usually find depression in those they screen. One nurse practitioner reported every time she screens, she finds positive signs of depression. The information that one person always finds depression when screening is interesting and causes questions about the instrument used, or whether careful selection of who is screened leads to this finding. What is needed, however, is a better understanding of the reasons why some do not screen at all, especially in light of the significant, life-changing effects of adolescent depression, and the risk of suicide (Lewinsohn, Pettit, Joiner & Seeley, 2003).

When asked if they prescribed antidepressants 79.4% reported that they rarely or never prescribe antidepressants. Perhaps this is related to the 2004 FDA black box warning on antidepressant usage in teenagers and young adults or the perception of the scope of practice of these PNP and FNP nurse practitioners. No information was found in the literature about the frequency of nurse practitioners prescribing antidepressants, but in a study of pediatric primary care providers, the providers reported they decided to treat adolescents with medications due to the lack of available mental health resources in their community(Richardson, Lewis, Casey-Goldstein, McCauley & Katon, 2007). They also reported feeling responsible for their patients due to long standing relationships and patient and family beliefs and preferences regarding treatment.

Most reported referring adolescents with positive screens for depression for psychotherapy. When asked if they refer to psychiatrists, psychologists or mental health nurse practitioners, 80.3% responded they do make referrals for specialty care. This is encouraging

information as the Treatment of Adolescent Depression Study recommends psychotherapy in conjunction with antidepressants as the optimal approach to managing adolescent depression. The specialty psychiatric health care providers can prescribe the appropriate medication to use in conjunction with psychotherapy (Curry, et al., 2005).

5.3.2 *Second Question*

Question 2 asked: What are the relationships among the background factors of age and length of time in practice, attitudes, perceived norms, perceived control, actual control and the behavior and action of screening adolescents for depression in nurse practitioners? This question provides an opportunity to assess the Theory of Reasoned Action and the model of this study.

The results of this study support the relationships predicted by the Theory of Reasoned Action and provides new information on the adolescent screening practices of Texas Nurse Practitioners. The background factor of age did not correlate with any of the items except length of time in practice. The background factor of length of time in practice did not correlate with actual control, but did correlate weakly with screening behavior, attitude, perceived behavioral control and perceived norm ($p<.05$). The relationships among attitude, perceived behavioral control, perceived norms, actual control, and the behavior of screening provide support the TRA and the study's framework. There was no significant correlation between age and screening behavior, attitude, perceived norm, actual control or perceived behavioral control. There was no significant correlation between time in practice and actual control. The attitudes nurse practitioners have about screening, such as seeing it as a part of their job, their opinion of what others are doing about screening in their practices, their sense of competence, their relationship with their patients and family, their view of a conducive work environment and administrative support, along with their work experience and knowledge, and ability to refer depressed children to others facilitate these nurse practitioners' screening behaviors.

5.3.3 *Third Question*

Question 3 asked: What instruments do primary care nurse practitioners use to screen adolescents for depression during visits with adolescents? This question was helpful in learning about screening behavior of nurse practitioners. Information about the instruments used, the reliability, specificity and sensitivity lends strength to the use of the instrument.

The most commonly used instrument for screening (*n*=25, 32.1%) was the Home and Environment, Education and Employment, Activities, Depression, Drug Use, Diet Sexuality, Suicide and Depression and Safety (Goldenring & Cohen, 1988).This evaluation uses the mnemonic HEADDSS and is often used in an interview style to assess the biopsychosocial world of the adolescent, build rapport, and develop a plan of care for the teenager. No reliability, sensitivity or specificity could be found for this screening tool. The next two instruments were recommended by the USPSTF for evaluating adolescents for depression. The Patient Health Questionnaire-9 was used by 14.1% of the sample (*n*=22). This instrument has a reported sensitivity of 89.5% and specificity of 77.5% with an internal consistency reliability of .76. The PHQ-9 is available in numerous languages (Zuckerbot & Jensen, 2006). The Beck Depression Inventory (BDI) was the third most frequently selected choice with 10.7% saying they used this instrument (*n*=17). The BDI has a reported sensitivity of 74%, a specificity of 75%, and internal consistency of .92. This instrument must be purchased and comes in numerous languages (Beck, Steer,& Brown, 1996). However, the method that got the most use (32.1%) was the Subjective Units of Distress (*n*=50). This tool is not actually a screening instrument but a way to clinically monitor the level of subjective symptoms. Arranged as a scale, usually 1-10, patients are asked to rate their symptoms. Each visit the stated number can be used as a comparison for both the clinician and the patient.

5.4 Limitations of the Study

The limitations of this study were the use of convenience sampling, and a homogeneous sample, which consisted of only one type of provider. The data are not generalizable to nurse

practitioners as a whole, due to the small sample size and including only PNPs and FNPs. Only Texas nurse practitioners were assessed. The nurse practitioners who did not respond might engage in screening behaviors differently than those who participated in the study. On the other hand, the nurse practitioners who did respond might be more motivated towards research or screening behaviors than those who did not. Also, although Texas has a large number of NPs, Texas NPs and the way they practice may differ from nurse practitioner practice in other parts of the United States. However, this study's sample does include family and pediatric nurse practitioners from all regions of the state and includes both rural and urban areas of practice within this state.

One of the limitations of this study was the use of a survey that was self administered, and, specifically the problem of low response rates. In addition, this was a survey created by the researcher. Although content validity was supported by an expert panel of reviewers, its reliability on each of the subscales was < .7, the minimum that is considered acceptable for internal consistency reliability. This instrument may not adequately measure the constructs as defined. This is, however, a new instrument and continued development will hopefully improve the survey's psychometric characteristics.

Another limitation was the use of self- report which may have resulted in more positive responses because of social desirability and acquiescence biases. Social desirability, the tendency to answer questions in a manner that will be viewed favorably by others, is a potential problem in self- report measures. Berry (2009) described this concern in her study: nurse practitioners reported greater use of clinical preventive services than the actual recommendations reported by the patients who they had seen. Acquiescence bias occurs when respondents have a tendency to agree to all questions that have a positive connotation and may occur when an individual might agree with a statement when in doubt. These biases may contribute to measurement error, as they interfere with the interpretation of average tendencies as well as individual differences (Maxwell & Delaney, 2004).

Another limitation of this study might be the time factor of six weeks in which data were collected. Perhaps, the respondents needed more time to respond. The survey required fixed choice responses for all but two items, thus limiting the richness of responses.

5.5 Conclusions

This study represents the first that explored family and pediatric nurse practitioners' screening behaviors for adolescent depression. The findings of the study support the constructs of the study model based on the Theory of Reasoned Action with primarily moderate to strong correlations among the constructs that were studied. In this convenience sample, the majority believed that screening adolescents for depression was their job and used reliable, sensitive and specific instruments in their practices. The FNPs and PNPs who participated in this study described evidenced based factors that prompt them to screen adolescents for depression. In their visits with teens, whether for well checks, athletic physicals, immunization provision, episodic or emergency care, the nurse practitioners provided depression screening only about half of the time, and opportunities to screen for depression are being missed. Although more than half of these nurse practitioners did not prescribe antidepressants, the majority referred the adolescents they suspected had depression to psychotherapist or specialty psychiatric care providers such as psychiatrists, psychologists and psychiatric mental health nurse practitioners. The findings of the study indicate that these Texas NPs are practicing screening behaviors that could contribute to meeting the objectives of Healthy People, 2020 related to screening adolescents for depression

5.6 Implications for Nursing

A need for further education on screening and managing adolescent depression was identified in this study, as a small percentage reported they had no training in screening practices. About a quarter did not feel competent to screen. In addition, most participants indicated they were interested in continuing education units on adolescent depression and screening adolescents for depression.

Concerns for development or improvement of cultural competence may also be indicated by these findings, as none of the nurse practitioners mentioned this area as a factor in their prompts to screen adolescents for depression. In the state of Texas, many Hispanic youth may need mental health care, but may be unrecognized. The importance of becoming involved in legislature and the various nurse practitioner professional organizations is underscored by this study. FNPs and PNPs need to advocate and lobby for insurance coverage to provide payment for adolescent depression screenings.

5.7 Recommendations for Additional Research

Conducting a qualitative study with interviews of nurse practitioners could be useful to add insight into this topic. Questions about why nurse practitioners do not screen, why they may be using more than one instrument in a practice, details on the time it takes to screen an adolescent for depression, and specific factors that may affect the family and child accepting the diagnosis of depression and its treatment would lend increased information to this topic. Gaining information on best practices, exploring how nurse practitioners structure each type of office visit to learn details on how they might be able to screen during each type of visit could also be explored by this method.

This study needs to be replicated after the instrument is refined. Conducting this research in conjunction with state and national professional organizations and including physicians, physician assistants and nurse practitioner on a regional or national level would provide a better description of screening behaviors in the United States and may result in a larger sample size. Funding assistance and use of the United States mail, rather than the internet, to collect data may also improve sample size.

The existing data could also be re-analyzed to look at differences in some of the findings. For instance, additional research questions could be studied about differences in screening behaviors of those with no access to instruments to screen to those with screening instruments or differences in the settings and background factors of those PNP and FNP who have no methods to

effectively treat and those who refer for psychotherapy and other psychiatric mental health specialists. Another difference that could be studied would be comparing the attitudes, time in practice, perceived norms, perceived behavioral control, and actual control of those who screen with those who do not screen.

5.8 Summary

Findings related to adolescent depression screening practices of PNPs and FNPs had not been reported before this study. In light of the recent recommendation of the USPSTF and the continued objectives of Healthy People, 2020 to screen for adolescents for depression, this study was timely. Knowledge has been gained on screening behaviors of FNPs and PNPs in Texas through this study, though more information is needed.

The majority of Texas PNP and FNP who participated in the study are screening adolescents for depression. The study also revealed, however, that opportunities to screen were being missed about 40% of the time. The participants were primarily using the two instruments suggested by the USPSTF, the PHQ-9 and the Beck Depression Inventory to screen adolescents. The HEADSS was the participants' first choice in screening instruments, an indication that the nurse practitioners go a step beyond screening for depression by exploring other psychosocial variables. This study supported the constructs of the Theory of Reasoned Action (Fishbein & Ajzen, 2010) by the nurse practitioners' primarily positive attitudes, sense of perceived behavioral control and perceived norms correlation with the action of screening for depression. Future studies may produce generalizable findings when conducted with an improved instrument and an increased sample size that would include providers of all types.

In conclusion, data were collected from a convenience sample of FNPs and PNPs to examine the constructs of the Theory of Reasoned Action and their relationships to one another in performing the behavior of screening adolescents and implementing treatment for depression. This chapter discussed the findings of this exploratory descriptive study on the adolescent depression screening practices of nurse practitioners. It is hoped that nurse practitioners will

continue to demonstrate positive attitudes and beliefs coupled with knowledge and skill in providing depression assessment to adolescents. If so, adolescents will be screened and when found to have depression will have the opportunity to receive early and appropriate treatment for a full recovery of their depressive episodes.

APPENDIX A

SCREENING INSTRUMENTS

Depression Screening Instruments

Instruments	Sensitivity/ Specificity	Reliability Validity	Languages	Usefulness
Beck Depression Instrument, Youth (Beck, Steer,& Brown, 1996; Sharp & Lipsky, 2002; Winder, Steer, Jones-Hicks, & Beck, 1999)	74% and 75%, Major Depression (Adams & Snow, 2010).	Cronbach's Validity = .92/ .93 Test retest = .93 Concurrent validity with Hamilton Psych Rating scale= .71	Available in Spanish, English and numerous other languages	For clinicians Scales 5 areas; Ages: 7-18 yo Must purchase: $260 starter kit. $74 for manual and 25 record forms. http://psychcorp.com
Center for Epidemiological Studies of Depression (Garrison, Addy, Jackson, McKeown, & Waller,1991; Radloff, 1991; Sharp & Lipsky, 2002)	a cut off point of 12 for males (sensitivity = 0.85, Specificity = 0.49) females,a cut point of 22 was optimal (sensitivity = 0.83, Specificity = 0.77).	None could be Found	Available in Spanish and English.	Ages 14 and older. Self report. useful as a first stage screening instrument; but must defer to a comprehensive eval. Depression inventory used as Initial screener and or Measure of treatment progress. Scores may indicate depressive symptoms in children and adolescents as well as significant levels of depression. Is a free instrument
Children's Depression Inventory (Figueras Masip,Amador -Campos, Gomez-Benito, delBarrio Gandara, 2010; Kovacs, 2003)	The cut-off point,19, sensitivity of 94.7%, specificity of 95.6%, .	Cronback's alpha= High .80s for total Scores; Test-retest: .84; Construct validity correlated with Reynolds Adolescent Depression r=.56	More than 20 languages	Ages 7 to 17. Self report and parent forms.
Children's Depression Scale (Poznanski, Freeman,& Mokros, 2007; Tisher & Lang, 1983)	Not found.	Cronbach's alpha = .92; Test-retest =.80 Concurrent validity With global rating of Depression r=.87	Various Languages. Has been studied in Japan, India, Italy, Holland, and Spain	Ages 6 to 12 yo. Semi structured interview with data from parents; is flexible and thus may lead to loss of validity and reliability if standardized format is not used. Is a free instrument.

Depression Screening Instruments- Continued

Instruments	Sensitivity/ Specificity	Reliability Validity	Languages	Usefulness
Diagnostic Interview Schedule For Children (Shaffer, et al., 2000)	None could be found.	None could be Found	English and Spanish	Parallel youth and caretaker interviews are available, that are suitable for children aged 9 to 17 years, and for caretakers of 6 to 17 year olds. Covers 36 mental health disorders for children & adolescents, using DSM-IV criteria. Cumbersome; Useful for research primarily.
Kandel Depression Scale (Kandel & Davies, 1982; Patten, Gillin, Farkas, Gilpin, Berry, & Pierce, 1977)	Could not be Found	Reliability = .72 Validity, not found	Available in English, Dutch, and Spanish.	Six item self report scale.
Guidelines for Adolescent Preventive Services (Elster & Kuznets, 1994)	Could not be found.	Reliability 0.72 Validity: not Found	English And Spanish Versions.	Ages 11-21. 72 items for younger adolescent; 61 items for middle or older adolescence. Is free instrument. http://www.ama.assn.org/ama
HEADSS (Biddle, Sekula, Zoucha, & Puskar, 2010; Cohen, MacKenzie,& Yates, 1991; Goldenring,& Rosen, 2004)	Could not be found,	No information found.	In English.	Aids in identification of Suicide ideation and depression In adolescents. Structured interview between teen and provider. Looks at Home, environment, Education employment, Eating/exercise, Activities and peer relationships ,Drugs, cigarettes, alcohol, and Sexuality, Safety and Spirituality.
Pediatric Symptom Checklist (Jellinek, Little, Murphy, & Pagano, 1995)	specificity = 100% in samples with a lower socio-economic status, compared with 68% in middle-class samples. Sensitivity= 95% in middle-class samples compared with 80% in lower-class samples.	Reliability = .80 Validity: not Found.	Available in Spanish and English	Ages 3-16 y o. 35 items . It is an alternative tool for screening pediatric patients for psychosocial problems. Pediatric Symptom Checklist Is not specific for depression, and is designed for parents to complete and may help identify young patients in need of further assessment Free instrument http://www.brightfutures.org/ Mentalhealth/pdf/professionals/ ped_Symtpoms_chklist.pdf

Depression Screening Instruments- Continued

Instruments	Sensitivity/ Specificity	Reliability Validity	Languages	Usefulness
PHQ-9 Adolescent Zuckerbot & Jensen, 2006	89.5% 77.5% for depression	Reliability .76 Validity, not found	Numerous languages	83 items, with 9 items for depression. Is free instrument. http://www. depression-primarycare. org/clinicians/toolkit/
Quick Inventory for Depression Symptomatology Rush, et al., 2003	79% 81%	Cronbach's alpha= 0.86 Concurrent validity With HAM-D = .86 total scores	Available in multiple languagues	16 items self report and Clinician report. Brief rating scale used in clinical practice and in research. Free.
Reynold's Adolescent Depression Scale (Reynolds, 2002; Reynolds & Mazza, 1998; Sharp & Lipsky, 2002)	Sensitivity 89% and specificity 90%	Cronbach's alpha = .78-.94; Test-retest =0.85 Criterion related Validity with Ham-D 0.76	English only.	Age 11 – 20 yo. Measures severity of depressive symptomatology and useful for monitoring effectiveness of treatment. Must purchase.
Subjective Units of Distress (SUD) (Kaplan, 1995)				Likert scale from 0-10 Patient reports level of distress; level can be compared from visit to visit. Can create scale for patient.
Zung Depression Scale (Cogollo, Diaz, Campo, 2006; Zung, 1965).	Sensitivity= 90% Specificity= 70%	Cronbach alpha = .689 Validity, not found.	Numerous languages.	Self report scale; often used to determine changes in mood over time. Most widely used for adult,a age 19 and older, depression screening. Does not clearly cover all DSMIV symptoms and has been used in adolescents.Is a free scale.

APPENDIX B

COVER LETTER AND POSTCARD:

INVITATION TO PARTICIPATE

February 1, 2012

To Texas Ambulatory Care Family and Pediatric Nurse Practitioner

You are invited to participate in a research study conducted through the University of Texas at Arlington that explores the screening practices and management of adolescent depression in your work setting. This survey is the method I am using for data collection for my PhD Dissertation in Nursing through the College of Nursing at the University of Texas at Arlington.

The survey consists of 44 questions and should take about 20 minutes to complete. Your participation will remain anonymous and I have no way to link your responses to your name or practice. No foreseeable risks exist with your participation; however, you may choose to stop your participation at any time. Your participation will add increased knowledge to this area of research. The analysis of this data may be used for publication and future research in this area but your name cannot be connected in any way. Your consent is implicit in the completion of the survey.

You may access this survey at _____.

Upon completion of the survey, please return to me the self-addressed, stamped postcard included in this mail. The postcard has a code that is linked to the list from which I obtained your name and will be used to prevent my sending you future requests for participation in this study. This postcard will also allow you to indicate your interest in the findings of this study, which will be made available to you by your request if you provide an email address. This postcard will be placed in a sealed box and accessed only at the conclusion of the study.

Thank you for your generous participation in this study. If you have any questions or concerns related to this study, you may contact

1. The University of Texas at Arlington Institutional Review Board
Regulatory Board (817)272-3723
2. Jennifer Gray, RN, PhD Associate Dean PhD Program College of Nursing
Chair MSN, Nursing Administration jgray@uta.edu 817-272-2776
Chair, Dissertation Committee: Adolescent Depression Screening and Management
3. Carol Lieser clieser@uta.edu 817-272-2776
Principal investigator PhD candidate, College of Nursing, UTA
Clinical instructor; Psych Mental Health Nurse Practitioner

Post Card, (self addressed and stamped for return to researcher)

Carol Lieser OFS, RN, PMHNP-BC
College of Nursing, Box 19407
Arlington, Texas 76019-0407

Mailing this postcard indicates I have completed the study. Regardless of your interest in the results, please return the postcard upon completion of the study.

Participant Name

Participant Code Number:_____

1. I would like information on the results of this study.
Circle your response. Yes No

Please email this information to this address:
_____

2. I would be interested in participating in future research on this topic. Circle your response. Yes No

Thank you for your participation in this study.

Carol Lieser

clieser@uta.edu

APPENDIX C

FOLLOW UP POSTCARD

A GENTLE REMINDER!

Dear Health Care Family Nurse Practitioner or Pediatric Nurse Practitioner,

You were sent a letter two weeks ago asking you to participate in my dissertation study with The University of Texas at Arlington. If you wish to participate in this survey study evaluating the depression management and treatment practices of pediatric and family nurse practitioners in the state of Texas, time is running out.

Please access the survey on the SurveyMonkey site at:

And then return the attached postcard to the researcher so that you will not receive future notices for participation.

If you have already responded to this survey, thank you for your participation.

Thank you, Carol Lieser, PhD candidate
The University of Texas at Arlington College of Nursing

817-272-2776 clieser@uta.edu.

APPENDIX D

SURVEY: SCREENING ADOLESCENTS FOR DEPRESSION

Nurse Practitioner Adolescent Depression Screening Practices

Thank you for agreeing to fill out my survey on adolescent depression screening. This survey is a part of my dissertation at The University of Texas at Arlington College of Nursing.
Your consent to participate is implicit in your participation as no separate consent form will be required. This survey should take no more than 15-20 minutes of your time. You may chose not to answer a question and may stop at any time, but I would appreciate full responses to each question. There are no right or wrong responses and your answers will be confidential. I will be unable to trace your answers to you. The only risk in filling out this survey is that you may feel concerns that your answers can be linked to you, however your participation will be anonymous. Your participation benefits the knowledge gained regarding the state of care provided in Texas for adolescents. I hope to be able to publish the findings once all data has been collected and analyzed, but no link between you and the results will be possible.
Remember to reply only once to this survey.
Upon completion of this survey, please return the pre-stamped post card I mailed to you so that you do not get another request for participation in this study.
If you have any questions or concerns, you may contact these resources:

1.The University of Texas at Arlington
Institutional Review Board
Regulatory Board (817)272-3723

2. Jennifer Gray, RN, PhD
Associate Dean PhD Program College of Nursing
Chair MSN, Nursing Administration
jgray@uta.edu 817-272-2776
Chair of Dissertation Committee:
Adolescent Screening Practices

3. Carol Lieser SFO, RN, PhD (c), PMHNP-BC
Clinical instructor,
Psych Mental Health Nurse Practitioner
College of Nursing, UTA
clieser@uta.edu 817-272-2776

1. What is the zip code of your primary place of practice? If you work in more than one location, list the zip code where you spend your greatest amont of work time.

2. In what role do you primarily work? Please choose only one.

- ◯ Acute care nurse practitioner, family nurse practitioner or pediatric nurse practitioner
- ◯ Geriatric nurse practitioner
- ◯ Psychiatric mental health nurse practitioner

Other (please specify)

3. Do you care for adolescents 11 to 20 years of age in your practice?

- ◯ No
- ◯ Yes

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4. I work:

- ◯ part time
- ◯ full time

5. I work primarily in (select only one answer)

- ◯ emergency room
- ◯ hospital care for specialty needs (eg neurology, surgery, endocrine, etc)
- ◯ private practice that provides medical care
- ◯ private practice that provides mental health care
- ◯ publically funded clinic that provides medical care
- ◯ publically funded clinic that provides mental health care
- ◯ retail clinic
- ◯ urgent care center

Other (please specify)

6. How old are you? State age in years from your last birthday.

7. Did your nurse practitioner program include information on screening adolescents for depression?

- ◯ No
- ◯ Yes

8. How long have your practiced in your professional role? State answer in years from your last anniversary date.

9. Do you provide athletic physicals to your adolescent patients?

- ◯ No
- ◯ Yes

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10. If you answered yes to question 9, do you screen adolescents for depression during an athletic physical visit?

- ◯ No
- ◯ Yes

11. Do you provide episodic visits for your adolescent patients?

- ◯ No
- ◯ Yes

12. If you answered yes to question 11, do you screen adolescents for depression during an episodic visit?

- ◯ No
- ◯ Yes

13. Do you provide immunization visits for adolescent patients?

- ◯ No
- ◯ Yes

14. If you answered yes to question 13, do you screen adolescents for depression during immunization visits?

- ◯ No
- ◯ Yes

15. Do you provide well check or physical examination visits for adolescents?

- ◯ No
- ◯ Yes

16. If you answered yes to question 15, do you screen adolescents for depression during well check or physical examination visits?

- ◯ No
- ◯ Yes

17. Do you provide emergency visits for adolescents?

- ◯ No
- ◯ Yes

Nurse Practitioner Adolescent Depression Screening Practices

18. If you answered yes to question 17, do you screen adolescents for depression during emergency visits?

- ◯ No
- ◯ Yes

19. Do you:

- ◯ Screen only specifically targeted or selected adolescents for depression?
- ◯ Screen all adolescents you see for depression?
- ◯ I do not screen adolescents for depression in my practice.

20. What instruments do you use to screen adolescents for depression? You may select more than one answer if you use more than one instrument.

- ☐ No screening instrument is used.
- ☐ Subjective units of distress
- ☐ Beck Depression Inventory (BDI)
- ☐ Center for Epidemiological Studies of Depression (CES-D; CES-DC)
- ☐ Children's Depression Inventory (CDI)
- ☐ Children's Depression Scale (CDS)
- ☐ Kandel Depression Scale
- ☐ PHQ-9 Adolescent (PHQ-9)
- ☐ Quick Inventory for Depression Symptomatology (QIDS)
- ☐ Zung Depression Inventory
- ☐ Reynold's Adolescent Depression Scale (RDS)
- ☐ Pediatric Symptom Checkist (PSC-17 or PSC-35)

Other (please specify)

21. What factors related to the adolescent prompt you to consider the diagnosis of depression in adolescents?

Nurse Practitioner Adolescent Depression Screening Practices

22. What factors related to the adolescent's family prompt you to consider the diagnosis of depression in adolescents?

23. Screening adolescents for depression is a part of my job

	strongly disagree	disagree	agree	strongly agree
Level of agreement:	◯	◯	◯	◯

24. In my practice

	strongly disagree	disagree	agree	strongly agree
I have methods to effectively treat adolescents for depression	◯	◯	◯	◯

25. My professional peers/colleagues

	strongly disagree	disagree	agree	strongly agree
do screen adolescents for depression	◯	◯	◯	◯

26. My professional organization

	strongly disagree	disagree	agree	strongly agree
recommends screening adolescents for depression	◯	◯	◯	◯

Other (please specify)

27. In my practice

	strongly disagree	disagree	agree	strongly agree
I do have enough time to screen adolescents for depression during my visits with them.	◯	◯	◯	◯

28. I feel

	strongly disagree	disagree	agree	strongly agree
I do have adequate trainng in screening adolescents for depression	◯	◯	◯	◯

29. In my practice

	strongly disagree	disagree	agree	strongly agree
I do have access to instruments to screen adolescents for depression.	◯	◯	◯	◯

Nurse Practitioner Adolescent Depression Screening Practices

30. In my practice

	strongly disagree	disagree	agree	strongly agree
I do have adminstrative support for screening adolescents for depression	◯	◯	◯	◯

31. I feel

	strongly disagree	disagree	agree	strongly agree
My job setting is conducive to screening adolescents for depression	◯	◯	◯	◯

32. I find that

	strongly disagree	disagree	agree	strongly agree
insurances do reimburse me for screening adolescents for depression	◯	◯	◯	◯

33. In my practice

	strongly disagree	disagree	agree	strongly agree
someone else screens adolescents for depression	◯	◯	◯	◯

34. I find

	strongly disagree	disagree	agree	strongly agree
the patient or his family will accept the diagnosis of depression that I make	◯	◯	◯	◯

35. I find

	strongly disagree	disagree	agree	strongly agree
the adolescent and his family agree to treatment for diagnosis of depression	◯	◯	◯	◯

36. I find that

	strongly disagree	disagree	agree	strongly agree
the adolescents' physical problems distract me from considering the possibility of depression.	◯	◯	◯	◯

Nurse Practitioner Adolescent Depression Screening Practices

37. I am concerned that:

	strongly disagree	disagree	agree	strongly disagree
the instruments I have available to use for screening adolescents for depression are not culturally sensitive to my population of adolescents.	◯	◯	◯	◯

Other (please specify)

38. In my visits with adolescents,

	strongly disagree	disagree	agree	strongly agree
discussion related to depression does not come up.	◯	◯	◯	◯

39. I feel

	stronlgy disagree	disagree	agree	strongly agree
I am competent to screen adolescents for depression	◯	◯	◯	◯

40. My screening

	I do not screen	never	rarely	most of the time	all of the time
results in positive findings of depression	◯	◯	◯	◯	◯

41. If I find a positive screen for depression during my visits with adolescents

	never	rarely	most of the time	all of the time
I prescribe antidepressants.	◯	◯	◯	◯

42. If I find a positive screen for depression during my visits with adolescents

	never	rarely	most of the time	all of the time
I refer them for psychotherapy	◯	◯	◯	◯

43. If I find a positive screen for depression during my visits with adolescents

	never	rarely	most of the time	all of the time
I refer them to psychiatrists, psychologists or mental health nurse practitioners for management.	◯	◯	◯	◯

Nurse Practitioner Adolescent Depression Screening Practices

44. Would you be interested in CEUs on the issues of adolescent depression screening?

- ◯ No
- ◯ Yes

Thank you for your participation in this study. You have now finished this survey. Please return the postcard you were mailed so that you are not sent a second request to participate in this study. If you wish to learn about the findings of this study, please include contact information such as your email address on the returned postcard.

Carol Lieser

APPENDIX E

CONTENT VALIDITY ASSESSMENT

Evaluation of Survey of Adolescent Depression Issues

RATE EACH ITEM	1, poor	2, adequate	3, good	4, excellent		
Item Number	clearly written	useful for survey	easy to answer	Suggestions		
Q 1				Yes	No	
Q2				Yes	No	
Q3				Yes	No	
Q4				Yes	No	
Q5				Yes	No	
Q6				Yes	No	
Q6				Yes	No	
Q7				Yes	No	
Q8				Yes	No	
Q9				Yes	No	
Q10				Yes	No	
Q11				Yes	No	
Q12				Yes	No	
Q13				Yes	No	
Q14				Yes	No	
Q15				Yes	No	
Q16				Yes	No	
Q17				Yes	No	
Q18				Yes	No	
Q19				Yes	No	
Q20				Yes	No	
Q21				Yes	No	
Q22				Yes	No	
Q23				Yes	No	
Q24				Yes	No	
Q25				Yes	No	
Q26				Yes	No	
Q27				Yes	No	
Q28				Yes	No	
Q29				Yes	No	
Q30				Yes	No	
Q 31				Yes	No	
Q32				Yes	No	
Q 33				Yes	No	
Q 34				Yes	No	
Q35				Yes	No	
Q36				Yes	No	
Q37				Yes	No	
Q38				Yes	No	
Q39				Yes	No	
Q40				Yes	No	
Q41				Yes	No	
Q 42				Yes	No	
Q 43				Yes	No	

APPENDIX F

IRB APPROVAL LETTER

February 24, 2012

**THE
UNIVERSITY
OF TEXAS
AT
ARLINGTON**

Carol Lieser
Dr. Jennifer Gray
College of Nursing
Box 19407 **Protocol Title:** *Adolescent Depression Screening Practices among Texas Ambulatory Care Nurse Practitioners*

RE: Exempt Approval Letter
IRB No.: **2012-0061e**

The UT Arlington Institutional Review Board (UTA IRB) Chair (or designee) has reviewed the above-referenced study and found that it qualified as exempt from coverage under the federal guidelines for the protection of human subjects as referenced at Title 45 Part 46.101(b)(2). You are therefore authorized to begin the research as of February 08, 2012.
Please be advised that as the principal investigator, you are required to report local adverse (unanticipated) events to this office within 24 hours. In addition, pursuant to Title 45 CFR 46.103(b)(4)(iii), investigators are required to, "promptly report to the IRB ***any*** proposed changes in the research activity, and to ensure that such changes in approved research, during the period for which IRB approval has already been given, are **not initiated without IRB review and approval** except when necessary to eliminate apparent immediate hazards to the subject."
All investigators and key personnel identified in the protocol must have documented Human Subject Protection (HSP) Training or *CITI Training* on file with this office. The UT Arlington Office of Research Administration Regulatory Services appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Robin Dickey at robind@uta.edu or you may contact the Office of Regulatory Services at 817-272-3723.

Sincerely,

Digitally signed PATRICIA TURPIN

Patricia G. Turpin, PhD, RN, NEA-BC
Clinical Associate Professor UT Arlington IRB Chair

REFERENCES

Agrawal, A., Lynskey, M.T., Bucholz, K.K., Madden, P.A.F., & Heath, A.C. (2007). Correlates of cannabis initiation in a longitudinal sample of young women: The importance of peer influences. *Preventive Medicine, 45,* 31-34. doi: 10.1016/j.ypmed.2007.04.012.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Englewood Cliffs, NJ: Prentice-Hall.

Allen, J.D., Stanley, J., Crabtree, M.K., Werner, K.E. & Swenson, M. (2005). Clinical prevention and population health curriculum framework: The nursing perspective. *Journal of Professional Nursing, 21,* 259-267.

American Academy of Child and Adolescent Psychiatry. (AACAP). (2007). Practice parameters for the assessment and treatment of child and adolescents with depressive disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 46* (11), 1503-1526.

American Academy of Nurse Practitioners. (AANP) (2003). What is a nurse practitioners? Retrieved from http://www.acNpweb.org/i4a/pages/index.dfm?pageID=3479.

American Academy of Nurse Practitioners. (AANP) (2007). Nurse practitioner primary care competencies in specialty areas. Retrieved from http://www.aanp.org/AANPCMS2/ResearchEducation/EducationPageOne/NP+Preparation/NPCompetencies.html

American Academy of Pediatricians. (AAP) (2002). *Bright futures guidelines for health supervision of infants, children and adolescents.* Elk Village, ILL: American Academy of Pediatricians.

American College of Physicians (2006). The impending collapse of primary care medicine and its implications for the state of the nation's health care. Washington, DC: ACP.

Retrieved from http://www.acponline.org/advocacy/events/ state-of healthcare/stache06_1.pdf.

American Medical Association. (AMA). (1997). *Guidelines for Adolescent Prevention Services : Recommendations monograph.* Chicago: ILL. Retrieved from http://www.ama-assn.org//resources/doc/ad-hlth/gapsmono.pdf

American Psychiatric Association. (APA). (2000). *Diagnostic and statistical manual of mental disorders DSM-IV-Tr* (text revision) (4th ed.). Washington, DC: APA.

Anderson, A. G., & Lavallee, D. (2008). Applying theories of reasoned action and planned behavior to athlete training adherence behavior. *Applied Psychology: An International Review, 57* (2), 304-312. Retrieved from http://www. onlinelibrary.wiley.com/journal/10.1111/(ISSN)1464-0597

Ani, C., Bazargan, M., Hindman, D., Bell, D., Farooq, M.A., Akhanjee, L., . . . Rodriguez, M. (2008). Depression symptomatology and diagnosis: Discordance between patients and physicians in primary care settings. *BioMed Central Family Practice, 9* (1),1-9. doi: 10.1 l86/1471-2296-9-1.

American Psychiatric Association. (APA). (2000). *Diagnostic and statistical manual of mental disorders DSM-IV-Tr* (text revision) (4th ed.). Washington, DC: APA.

Asarnov, J.R., Jaycox, L.H., & Anderson, M. (2002). Depression among youth in primary care: Models for delivering mental health services. *Child and Adolescent Psychiatric Clinics, 11,* 477-497.

Baare, W.F., Vinberg, M., Knudsen, G.M., Paulson, O.B., Langkilde, A.R., … Kessing, l.V. (2010). Hippocampal volume changes in healthy subjects at risk of unipolar depression. *Journal of Psychiatric Research, 44*(10), 655-662. doi:10.1016/j.jpsychires.2009.12.009

Bearman, S.K. (2008). Testing a gender additive model: The role of body image in adolescent depression. *Journal of Abnormal Child Psychology, 36* (8), 1251-1263. doi: 10.1007/s10802-008-9248-2

Beck, A. T., Steer, R.A., Brown, G. K, (1996), *Mental Measurements Yearbook with Tests in Print, 14.* North Tonawanda, NY: Multi-Health Systems.

Beck A.T., Ward, C.H., Mendelson M., Mock J., & Erbaugh, J.(1961). An inventory for measuring depression. *Archives of General Psychiatry, 4,* 53-63.

Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice.* Menlo Park, CA: Addison-Wesley Pub.

Benner, P. (1987). Clinical judgment: How expert nurses use intuition. *American Journal of Nursing, 87* (1), 23-31. http:www.jstor.org/stable/3470396.

Berry, J. A. (2009). Nurse practitioners' use of clinical preventive services. *Journal of the American Academy of Nurse Practitioners, 21,* 454-460. doi: 10.111.j.1745-7599.2009.00435.x

Bhatia, S., & Bhatia, S. C. (2007). Childhood and adolescent depression. *American Family Physician, 75* (1), 73-80.

Biddle, V.S; Sekula, L.K,; Zoucha, R.; Puskar, K.R. (2010). Identification of suicide risk among rural youth: implications for the use of HEADSS. *Journal of Pediatric Healthcare, 24* (3), 152-67.

Birmaher, B., Brent, D. A., Kolko, D., Baugher, M., Bridge, J., Holder, D.,… Ulloa, R. E. (2000). Clinical outcome after short term psychotherapy for adolescents with major depressive disorder. *Archives of General Psychiatry, 57(1),* 29-36. doi: 10.1001/archpsyc.57.1.29

Bonin, L. (2011) Depression in adolescents. http://www.uptodate.com/contents/patient-information-depression-in-adolescents.

Brandt, R., Ward, C.L., Dawes, A., & Flisher, A.J. Epidemiological measurement of children's and adolescents' exposure to community violence: Working with the current state of the science. *Clinical Child and Family Psychology Review, 8* (4), 327-342. doi: 10.0117/s10567-005-8811-4.

Brent, D. A., & Maalouf, F.T. (2009). Pediatric depression: Is there evidence to improve evidence-based treatment? *Journal of Child Psychology and Psychiatry, 50* (1-2), 143-152. doi: 10.1111/j.1469-7610.2008.02037.x

Broderick, P. (2000). Pediatric vision screening for the family physician. *American Family Physician,* Retrieved from http://www.aafp.org/afp/980901ap/broderic.html

Brooks, T.L., Harris, S.K., Thrall, J.S., & Woods, E.R. (2002). Association of adolescent risk behaviours with mental health symptoms in high school students. *Adolescent Health, 31*, 240-247. doi:10.1016/S1054-139X(02)00385-3

Brown, J.D., & Wissow, L. S. (2010). Screening to identify mental health problems in pediatric primary care: Considerations for practice*. International Journal of Psychiatry in Medicine, 40* (1), 1-19. doi: 10.2190/PM.40.1a

Brown, L.K., Hadley, W., Stewart, A., Lescano, C., Whiteley, L., Donenberg, G., & DiClemente, R. (2010). Psychiatric disorders and sexual risk among adolescents in mental health treatment. *Journal of Consulting and Clinical Psychology, 78* (4), 590-597.

Bryan, C.J., Corso, K.A., Rudd, M.D., & Cordero, L. (2008). Improving identification of suicidal patients in primary care through routine screening. *Primary Care & Community Psychiatry, 13* (4), 143-147.

Buka, S.L., Monuteauz, M., & Earls, F. (2002). The epidemiology of child and adolescent mental health disorders . In M.T. Tsuang, & M. Tohen (Eds.). *Textbook in psychiatric epidemiology*, 2nd ed. pp. 629-655. NY: Wiley-Liss.

Burns, D. (1999). Burns Depression Inventory in Feeling good: The new mood therapy. Retrieved from http://www.organizedwisdom.com/Quiz/Burns_Depression_Inventory

Burns, J.J., Cottrell, L., Perkins, K., Pack, R., Stanton, B., … Hauschka, A. (2004). Depressive symptoms and health risks among rural adolescents. *Pediatrics, 113* (5), 1313- 1320.

Burns, K.J., Camaione, D.N., & Chatterton, C.T. (2000). Prescription of physical activity by adult nurse practitioners: A national survey. *Nursing Outlook, 48* (1), 28-33.

Burns, N., & Grove, S. (2009). *The practice of nursing research: Appraisal, synthesis, and generation of evidence.* (6th ed.). St. Louis: Saunders.

Buzi, R.S., Weinman, M.S., & Smith, P.B. (2007). The relationship between adolescent depression and a history of sexual abuse. *Adolescence, 42* (168), 679-688.

Campbell, M. (2009). Communicating the role of hunting for wildlife management. *Human Dimensions of Wildlife, 41* (1). 21-36.doi: 10.1080/10871200802545781.

Carney, J.V. (2000). Bullied to death: Perceptions of peer abuse and suicidal behavior during adolescence. *School Psychology International, 21,* 213-222. doi: 10.177/0143034300212007.

Centers for Disease Control and Prevention (CDC). (2010). Hearing loss in children: Screening and diagnosis. Retrieved from http://www.cdc.gov/NCBDDD/hearingloss/screening.html

Chinet, L., Plancherel, B., Bolognini, M. , Bernard, M., Laget, J.,Danielle, G., & Halfon, O. (2006). Substance use and depression: Comparative course in adolescents. *European Child and Adolescent Psychiatry, 15,* 149-155. doi: 10.1007/s00787-005-0516-1.

Chitamun, S., & Finchilescu, G. (2003). Predicting the intention of South American female students to engage in premarital sexual relations: An application of the Theory of Reasoned Action. *South African Journal of Psychology, 33 (3),* 154-161.

Choi, H. (2002). Understanding adolescent depression in ethnocultural context. *Advances in nursing science, 25 (2)*, 71-85. Retrieved from http://journals.lww.com/advancesinnursingscience/toc/2002/12000

Cogollo, Z., Diaz, C.E.,& Campo, A (2006). Exploration of the construct validity of the Zung's self rating depression scale among adolescent students. *Colombia Medica 37* (2), 102-106.

Cohen, E, MacKenzie, R.G., Yates, G.L. (1991). HEADSS, a psychosocial risk assessment instrument: Implications for designing effective intervention programs for runaway youth. *Journal of Adolescent Health 12 (7),* 539-544.

Cooke, R., & French, D.P. (2008). How well do the theory of reasoned action and theory of planned behavior predict intentions and attendance at screening programmes? A meta-analysis. *Psychology & Health, 23* (7), 745-765. doi: 10.1080/08870440701544437

Cooper, L.A., Gonzales, J.J., Gallo, J.J. Rost, K. M.; Meredith, L. S.; Rubenstein, L. V.; Wang, N-Y; & Ford, D. E. (2003). The acceptability of depression treatment among African Americans, Latino, and white primary care patients. *Medical Care, 41* (4), 479-489. Retrieved from http://journals.lww.com/lww-medicalcare/pages/default.aspx

Cooper, R.A. (2009). Delivery reform: The roles of primary and specialty care in innovative new delivery model. *Hearing before the United States Senate Committee on health, education, labor and pensions, 111th Congress, 1st session.* Retrieved from www.gpo.gov/fdsys/pkg/CHRG.../pdf/CHRG-111shrg49824.pdf

Corder, G.W. (2009). *Nonparametric statistics for non statisticians: A step by step approach*. Hoboken, NJ: Wiley.

Cornelius, J.B., LeGrand, S., & Jemmot, L. (2008). African American grandparents' and adolescent grandchildren's sexuality communication. *Journal of Family Nursing, 14* (3), 333-346.

Cronholm, P.F., Barg, F.K., Pailler, M.E., Wintersteen, M.B., Diamon, G.S., & Fein, J.A. (2010). Adolescent depression: Views of health care providers in a pediatric emergency department. *Pediatric Emergency Care, 26* (2), 111- 117.

Crow, S., Eisenbergy, M.E., Story, M., & Neumark-Sztainer, D. (2008). Are body dissatisfaction, eating disturbance, and body mass index predictors of suicidal behavior in adolescents? A longitudinal study. *Journal of Consulting and Clinical Psychology, 76,* 887-892.

Curry, J., Rohde, P., Simons, A., Silva, S., Vitiello, B., Kratochvil, C., … March, J. (2006). Predictors and moderators of acute outcome in the Treatment for Adolescence with

Depression Study (TADS). *Journal of the American Academy of Child and Adolescent Psychiatry, 45* (12), 1427-1439. doi: 10. 1097/01.chi.0000240838.78984.e2

Curry, J., Silva, S., Rohde, P., Ginsburg, G., Kratochvil, C., Simons, A., …March, J. (2011). Recovery and recurrence following treatment for adolescent major depression. *Archives of General Psychiatry, 68* (3), 263-270. doi: 10.1001/archgenpsychiatry.2010.150

D'Agostino, R.B., Vasan, R.S., Pencina, M.J., Wolf, P.A., Cobain, M., Massaro, J.M., & Kannel, W.B. (2008). General cardiovascular risk profile for use in primary care: The Framingham heart study. *Circulation, 117* (6), 743-753.

Dahl, R.E. (2004). Regulation of sleep and arousal. In R.E. Dahl, & L.P. Spear (Eds.). *Adolescent brain development: Vulnerabilities and opportunities* (pp. 292-293). NY:NY Academy of Sciences.

Dale, J. (2006). Quality issues with survey research. *International Journal of Social Research Methodology, 9* (2), 143-158. doi: 10.1080/13645570600595330

Davis, N.M. (2005). Depression in children and adolescents. *The Journal of School Nursing, 21* (6), 311-317. doi:10.1177/10598405050210060201

Dedovic, K., Enert, V., Duchesne, A., Lue, S.D., Andrews, J., Efanov, S.I., …Pruessner, J.C. (2010). Cortisol awakening response and hippocampal volume: Vulnerability for major depressive disorder? *Biological Psychiatry, 68,* 847-853. doi:10.1016/j.biopsych.2010.07.025.

DeRubeis,R. J., Hollon, S. D., Amsterdam, J. D.,Shelton, R. C., Young, P. R., Salamon, R.M ., . . . Gallop, R. (2005). Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of General Psychiatry, 62,* 409–416. doi:10.1001/archpsyc.62.4.409

DiClemente, R.J., Wingood, G.M., Crosby, R.A., Sionean, C. Brown, L.K., Rothbaum, Bl, **...** Davis, S. (2001). A prospective study of psychological distress and sexual risk behavior among black adolescent females. *Pediatrics, 108*, 1-6.

Donahue, K.L., D'Onofrio, B.M., Bates, J.E., Lansford, J.E., Dodge, K.A., & Pettit, G.S. (2010). Early exposure to parents' exposure to parents' relationship instability: Implication for sexual behavior and depression in adolescence. *Journal of Adolescent Health, 47* (6), 547-554. doi: 10.1016/j.jadohealth.2010.04.004.

Dwight-Johnson, M., Sherbourne, C.D., Liao, D., & Wells, K. B. (2000). Treatment preferences among depressed primary care patients. *Journal of General Internal Medicine, 18* (8), 527-534. doi:10.1046/j.1525-1497.2000.08035.x

Eaves, L., Silberg, J., & Erkalni, A. (2003). Resolving multiple epigenetic pathways to abstract adolescent depression. *Journal of Child Psychology and Psychiatry, 44* (7), 1006-1014. doi: 10.1111/1469-7610.00185

Edwards, H.E., Nash, R.E., Najman, J.M., Yates, P.M., Fentiman, B.J., McDowell, J.K. …Skerman, H.M. (2001). Determinants of nurses' intention to administer opiods for pain relief. *Nursing and Health Science Quarterly*, *3,* 149-159.

Eibner, C., Hussey, P., Ridgely, M.S., & McGlynn, E.A. (2009). *Controlling health care spending in Massachusetts; An analysis of options.* Santa Monica, CA: RAND Corporation.

Ellis, P. D. (2010). *The essential guide to effect sizes: Statistical power, meta-analysis, and the interpretation of research results.* Cambridge: University Press.

Elmquist, J. M., Melton,T. K., Croarkin, P., & McClintock, S. M. (2010). A systematic overview of measurement-based care in the treatment of childhood and adolescent depression. *Journal of Psychiatric Practice, 16* (4), 217-234. doi:10.1097/01.pra.0000386908.07160.91

Elster, A.B., & Kuznets, N.J. (1994). *Guidelines for adolescent preventive services.* Baltimore: Williams and Wilkins.

Erikson, E.H. (1959). *Identity and the life cycle*. NY: Norton.

Eshbaugh, E.M. (2007). Perceptions of family relationship factors and depressive symptoms in adolescents: What roles do parents and gender play? *Journal of Child and Family Studies, 17,* 127-139.

Evans, M.E. (2009). Prevention of mental, emotional, and behavioral disorders in youth: The Institute of Medicine report and implications for nursing. *Journal of Child and Adolescent Psychiatric Nursing, 23* (3), 154-159. doi: 10.1111.j.1744-6171.2009.00192.x

Farmer, E.M.Z., Burns, B.J., Phillips, S.D., Angold, A., & Costello, E.J. (2003). Pathways into and through mental health services for children and adolescents. *Psychiatric Services, 54* (1), 60-66. Retrieved from http://psychservices.psychiatryonline.org

Fassler, D. (2006). Adolescent depression: Early recognition leads to successful treatment. *The Prevention Researcher, 13*, 8-9.

Fergusson, D.M., & Woodward, L.J. (2002). Mental health, educational and social role outcomes of adolescents with depression*. Archives of General Psychiatry, 59,* 225-231.

Field, T., Diego, M., & Sanders, C. (2002). Adolescents' parent and peer relationships. *Adolescence, 37* (145), 121-130.

Fielding, J., Kumanykia, S., Evans, W.D., Felitti, V., Iezzoni, L., King, A., ….Troutman, A. (2011). *Healthy People, 2020: Mental health and mental disorders*. Washington, DC: US Department of Health and Human Services. Retrieved from: http://www.cdc.gov/nchs/data/hpdata2010/hp2010_final_review_focus_area_18.pdf

Figueras Masip, A., Amador-Campos, J.A., Gómez-Benito, J.,& del Barrio Gándara V. (2010). Psychometric properties of the Children's Depression Inventory in community and clinical sample. *Spanish Journal of Psychology, 13* (2), 990-999.

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. NY: Psychology Press.

Fletcher, J.M. (2008). Adolescent depression: Diagnosis, treatment and educational attainment. *Health Economics, 17*, 1215-1235.

Fletcher, J.M. (2009). Adolescent depression and educational attainment: Results using sibling fixed effects. *Health Economics, 19,* 855-871.

Fowler, F. J. (2009). *Survey research methods.* (4th ed.). Thousand Oaks, CA: Sage Pubs.

Frojd, S.A., Nissinen, E.S, Pelkonen, M.U., Mattunem, M.J., Kovisto, A.M., & Kaltiala-Heinos, R. (2008). Depression and school performance in middle adolescents boys and girls. *Journal of Adolescence, 31*, 485-498.

Gabbay, V., Klein, R.G., Alonso, C.M., Babb, J.S., Nishwala, M., DeJesus, G., …Gonzalez, C.J. (2009). Immune system dysregulation in adolescent major depressive disorder. *Journal of Affective Disorders, 115* (1-2), 177-182. doi: 10.1016/j.jad.2008.07.022

Garcia, C. M., & Duckett, L. J. (2009). No te enteindo y tú no me entiendes: Language barriers among immigrant Latino adolescents seeking health care. *Journal of cultural diversity, 16* (3), 120-126.

Gardner, W., Klima. J. Chisolm, D., Feehan, H. Bridge. J., Campo, J. … Kelleher, K. (2010). Screening, triage, and referral of patients who report suicidal thought during a primary care visit. *Pediatrics, 125* (5), 945-952. doi: 10,1542/peds.2009-1964.

Garrison, C.Z., Addy,C.L., Jackson, K.L., McKeown, R.E., & Waller, J. L. (1991). The CES-D as a screen for depression and other psychiatric disorders in adolescents. ***Journal of the American Academy of Child & Adolescent Psychiatry, 30* (4), 636-641.**

Gershoff, E.T., Aber, J.J., & Raver, C.C. (2003). Child poverty in the U.S: An evidenced based conceptual framework for programs and policies. In R.M. Lerner, F. Jacobs, & D. Wertleib (Eds). *Handbook of applied developmental science: promoting positive, child, adolescent and family development through research, policies, and programs. Vol 2* (pp 81-136). Thousand Oaks, CA: Sage.

Gilman, L.M. (2008). Survey ethics. *Encyclopedia of Survey Research Methods*. Thousand Oaks: Sage. http:libproxy.uta.edu:3246/survey/Article_n565.html

Goldenring, J. M., & Cohen, C., (2004). Getting into adolescent's heads. *Contemporary Pediatrics*, *21* (1), 75-90.

Gollan, J.K., & Pane, H. (2006). High rates of recurrence of depression in children and adolescents. *Evidence Based Mental Health, 9* (4), 95-100.

Goodman, E., Slap, G.B., & Huang, B. (2003). The public health impact of socioeconomic status on adolescent depression and obesity. *American Journal of Public Health, 93* (11), 1844-1850.

Graybiel, A.M. (2005). The basal ganglia: Learning new tricks and loving it. *Current Opinions in Neurobiology, 15*, 638-644. doi:10.1016/j.conb.2005.10.006

Greenberg, B.R. (2009). How to recognize depressive disorders in children and adolescents. *Journal of the American Academy of Physician Assistants. 22* (3), 38-42.

Grove, S. (2007). *Statistics for health care research*. St. Louis: Saunders.

Grover, A.M., Ginsburg, G.S., & Ialongo, N. (2005). Childhood predictors of anxiety disorders: A longitudinal study. *Child Psychiatry and Human Development, 36* (2), 133-153.

Hallfors, D., Brodish, P.H., Khatapoush, S., Sanchez, V., Hyunsan, C., & Steckler, A. (2006). Feasibilitiy of screening adolescents for suicide risk in "real-world" high school settings. *American Journal of Public Health, 96* (2), 282-287.

Hankin, B.L., & Abranson, L.Y. (2001). Development of gender differences in depression: An elaborated cognitive vulnerability-transactional stress theory. *Psychological Bulletin, 127* (6), 773-796. doi:10.1037//0033-2909.127.6.773

Hansen-Turton, T., Ware, J., & McClellan, F. (2009). Nurse practitioners in primary care. *Temple Law Review, 82.1235-1263.* Retrieved from: www.temple.edu/law/tlawrev/content/...5/82.5_Hansen-Turton.pdf

Hardin, M.G., Schroth, E., Pine, D.S., & Ernst, M. (2007). Incentive related modulation of cognitive control in healthy, anxious and depressed adolescents' development and psychopathology related differences. *Journal of Child Psychology and Psychiatry, 48*, 446-454. doi:10.1111/j.1469-7610.2006.01722.x

Harper, G., Marks, A., & Nelson, W.M. (2002). Teen depression: Overlooked and undertreated. *Patient Care for the Nurse Practitioner,* 10 p. Retrieved from http://libproxy.uta.edu:5745/ehost/detail?vid=28&hid=3&sid=fa076a92-33a0-4b1386919e531cab43%40sessionmgr4&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=rzh&AN=2003045787

Harrison, D.L., Miller, M.J., Schmitt, M.R., & Touchet, B.K. (2010). Variations in the probability of depression screening at community based physician practice sites. *Primary Care Companion Journal of Clinical Psychiatry, 12* (5), 9-11.

Harvey, P.O, Pruessner, J., Czechowska, Y., & Lepage, M. (2007). Individual differences in trait anhedonia: A structural and functional magnetic resonance imaging study in nonclinical subjects. *Molecular Psychiatry, 12,* 703,767-775. doi: 10.1038/sj.mp.4002021

Hazel, A. (2008). Early childhood adversity and adolescent depression: The mediating role of continued stress. *Psychological medicine, 38 (4)*, 581-589.

Healthy People Objectives (2011). Retrieved from http://www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf

Hollinghurst, S., Horrocks, S., Anderson, E., & Salisbury, C. (2006). Comparing the cost of nurse practitioners and GPs in primary care: Modeling economic data from randomized trials. *British Journal of General Practitioners, 56* (528), 530-535.

Huang, F.Y., Chung, H., Kroenke, K., Delucchi, K.L. & Spitzer, R.L. (2006)., Using the Patient Health Questionnaire-9 to measure depression among racially and ethnically diverse primary care patients. *Journal of General Internal Medicine, 21*, (6), 547-52..

Hughes, E.K., & Gullone, E. (2008). Internalizing symptoms and disorders in families of adolescents; A family systems review. *Clinical Psychology Review, 28* (1), 92-227. doi: 10.1016/j.cpr2007.04.002.

Hunter, E.C., Katz, L.F., Shortt, J.W., Davis, B., Leve, N.B., Allen, N.B., & Sheeber, L.B. (2011). How do I feel about feelings? Emotion socialization in families of depressed and healthy adolescents. *Journal of Youth and Adolescence, 40*, 428-441. doi: 10.1007/s10964-010-9545-2

Hysenbegasi, A., Haas, S. & Rowland C.R. (2005). The impact of depression on academic productivity of university students. *Journal of Mental Health Policy and Economics, 8,* 145-151.

Institute of Medicine). (IOM). (2008). *Crossing the quality chasm: A new health system for the 21st century.* Washington, DC: National Academy Press.

Jacobson, C. & Mufson, L. (2010). Treating adolescent depression using interpersonal psychotherapy. In: J. Weisz and A. Kazdin (Eds.). *Evidence-based psychotherapies for children and adolescents (2nd ed.).* (p. 602) NY: Guildford Press.

Jellinek, M., Little, M., Murphy, J.M., &Pagano, M. (1995). The pediatric symptom checklist: Support for a role in a managed care environment. *Archives of Pediatric and Adolescent Medicine, 149 (7),* 740-746.

Jellinek, M.S., Murphy J,M., & Little M. (1999). Use of the Pediatric Symptom

Checklist (PSC) to screen for psychosocial problems in pediatric primary care: A national feasibility study. *Archives of Pediatric and Adolescent Medicine, 153(3),* 254–260.

Johnson, J.G., Cohen, P., Kotler, L., Kasen, S., & Brook, J.S. (2002). Psychiatric disorders associated with risk for the development of eating disorders during adolescence and early adulthood. *Journal of Consulting and Clinical Psychology, 70,* 1119-1128.

Jonas, B. (2011). Depression screening for youth by primary care providers: Percent of primary care physician office visits that screen youth aged 12 to 18 years for depression. *National Ambulatory Medical Care Survey*. Retrieved from: http://www.healthindicators.gov/Indicators/Depression-screening-for-youth-by-primary-care-providers-percent_1121/National_0/Profile/Data

Jonsson, U., Bohman, H., Hjern, A., von Knorring, L., Olsson, G., & von Knorring, A. (2010). Subsequent higher education after adolescent depression: A 15 year follow-up register study. *European Psychiatry, 25,* 396-401.

Kandel, D., & Davies, M. (1982). Epidemiology of depressive mood in adolescents. *Archives of General Psychiatry, 39,* 1205-1212.

Kaplan, D.M. (1995). A validity study of the subjective unit of discomfort (SUD) Score. *Measurement and Evaluation in Counseling and Development, 27,* (4),195-199.

Kaye, L., Warner, L.A., Lewandowski, C.A., Green, R., Acher, J.K., & Chiarella, N. (2009). The role of nurse practitioners in meeting the need for child and adolescent psychiatric services. *Journal of Psychosocial Nursing and Mental Health Services, 47* (3), 34-40. doi:10.3928/02793695-20090301-07

Kennard, B.D., Silva, S.G., Tonev, S., Rohde, P., Hughes, J.L., Vitiello, B., …March, J. (2009). Remission and recovery in the Treatment for Adolescents with Depression Study (TADS): Acute and long-term outcomes. *Journal of the American Academy of Child and Adolescent Psychiatry, 48 (2)*, 186-195. doi:10.1097/CHI.obo13e318176f9

Kessler, R.C., Berglund, P.L., Demler, O., Jin, R., Merikangas, K.R., & Walters, E.E. (2005). Lifetime prevalence and age of onset distribution of DSM-IV disorders in the National Comorbidity Replications. *Archives of General Psychiatry 62* (6), 593-602.

Kleier, J. S. (2004). Nurse practitioners' behavior regarding testicular self-examination. *Psychiatric Services, 58* (3), 206-348.

Klein, D. N., Dougherty, L.R., & Olino, T.M. (2005). Toward guidelines for evidence based assessment of depression in children and adolescents. *Journal of Clinical Child and Adolescent Psychiatry, 34* (3), 412-432.

Koplewicz, H.S. (2002). *More than moody: Recognizing and treating adolescent depression*. NY: G.T. Putnam's Sons.

Kovacs, M. (2003). *Children's Depression Inventory: Mental measurements yearbook with tests in print,* 17. North Tonawanda, NY: Multi-Health Systems

Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607-610.

Kroenke, K., & Spitzer R. L. (2002). The PHQ-9: A new depression and diagnostic severity measure. *Psychiatric Annals, 32*, 509-521.

Lavigne, J. V., Binns, H.J., Christoffel, K.K., Rosenbaum, D., Arend, R., & Smith¸ K. (1993). Behavioral and emotional problems among preschool children in pediatric primary care: prevalence and pediatricians' recognition. *Pediatrics, 91* (3), *649-655.*

Lehrer, J.A., Shrier, L.A., Gortmaker, S., & Buka, S. (2006). Depressive symptoms as a longitudinal predictor of sexual risk behaviours among U.S. middle and high school students. *Pediatrics, 118,* (1), 189-200.

Lenz, E.R. Mundinger, M.O., Kane, R.L., Hopkings S.C., & Lin, S.X. (2004). Primary care outcomes in patients treated by nurse practitioners or physicians: Two year follow up study. *Medical Care Research Review, 61* (3), 332-351.

Lewinsohn, P.M., Pettit, J.W., Joiner, T.E., & Seeley, J.R. (2003). The symptomatic expression of major depressive disorder in adolescents and young adults. *Journal of Abnormal Psychology, 112* (2), 244-252.

Levinson, D.F. (2006). The genetics of depression: A review. *Biological Psychiatry, 60*, 84-92. doi: 10.1016/j.biopsych.2005.08.024

Lewis, G., Rice, F., Harold, G.T., Collishaw, S, & Thapar, A. (2011). Investigating environmental links between parent depression and child depressive/anxiety symptoms using an assisted conception design. *Journal of the American Academy of Child & Adolescent Psychiatry, 50* (5), 451- 459.

Li, C.E., DiGiuseppe, R., & Froh, J. (2006). The roles of sex, gender and coping in adolescent depression. *Adolescence, 41* (163), 409-415.

Li, Y., & Lerner, R.M. (2011). Trajectories of school engagement during adolescents: Implications for grades, depression, delinquency, and substance abuse. *Developmental Psychology, 47 (1)*, 233-246. doi: 10.1037/a0021307

Logsdon, M.C. (2004). Depression in adolescent girls: Screening and treatment strategies for primary care providers. *Journal of the American Medical Women's Association, 59* (2), 101-106.

Lowry, F. (2009). ACOG Issues Recommendations on Routine Pelvic Exam, Cervical Cytology Screening. Retrieved from http://www.medscape.com/viewarticle/70174

Luty, S. E., Carter, J. D., McKenzie, J. M., Rae,A. M, Frampton, C. M. A.,Mulder, R. T., . . . Joyce, P. R. (2007). Randomized controlled trial of interpersonal psychotherapy and cognitive-behavioral therapy for depression. *British Journal of Psychiatry,190,* 496–502. doi: 10.1192/bjp.bp.106.024729

Lyneham, J., Parkinson, C., & Denholm, C. (2009). Expert nursing practice; A mathematical explanation of Benner's 5th stage of practice development. *Journal of Advanced Nursing, 65* (11), 2477-2484. doi 10.1111/j.1365-2648.2009.05091.x.

MacPhee, A.R., & Andrews, J.J.W. (2006). Risk factors for depression in early adolescence. *Adolescence, 41* (163), 435-463.

Maxwell, S.E., & Delaney, H.D. (2004*).Designing experiments and analyzing data*. (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.

McCarly, C.A., Mason, W.A., Kossterman, R., Hawkins, J.D., Lengua, L.J., & McCauley, E. (2008). Adolescent school failure predicts later depression among girls. *Journal of Adolescent Health, 43* (2), 1180-187. Retrieved from: www.cinahl.com/cgi-bin/refsvc?jid=744&accno=2009994166.

Melnyk, B.M. (2007). The child and adolescent mental health crisis: Closing the service gap. *Imprint, 54,* 58-63.

Melnyk, B.M., Jacobson, D.K., O'Haver, S., Small, L., & Mays, M.Z. (2009). Improving the mental health, healthy lifestyle choices and physical of Hispanic adolescents: A randomized controlled pilot study. *Journal of School Health, 79* (12), 575-584. doi: 10.111/j.1746-1561.2009.00451.x

Melnyk, B.M., & Moldenhauer, Z. (2006). *The KySS guide to child and adolescent mental health screening, early intervention and health promotion*. Cherry Hill, NJ: NAPNAP.

Meredith, L.G., Stein, B.D., Paddock, S.M., Jaycox, L.H., Quinn,, V.P., Chandra, A., & Burman, A. (2009). Perceived barriers to treatment for adolescent depression. *Medical Care, 47* (6), 677-685.

Merikangas K.R., He, J., Burstein M., Swanson, S.A., Avenevoli, S., Cui, L., … Swendsen, J. (2010). Lifetime prevalence of mental disorders in U.S. adolescents: Results from the National Comorbidity Study-Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(10), 980-989.

Mezzaferro, K.E., Murray, P.J., Ness, R.B., Bass, D.C., Tyus, N., & Cook, R.L. (2006). Depression, stress and social support as predictors of high risk sexual behaviors and STDs in young women. *Journal of Adolescent Health, 39,* 1117-1125.

Mitchell, A. (2011). Recognition of depression and distress in primary care: Are clinical skills adequate in the absence of screening? *Healthcare Counseling and Psychotherapy Journal, 11* (3), 13-16.

Mitchell, A.J., Kaar, S., Coggan, C., & Herdman, J. (2008). Acceptability of common screening methods used to detect distress and related mood disorders. *Psycho oncology, 17* (3), 226-236.

Modrzejewska, R., & Bomba, J. (2020). Mental disorder and psychoactive substance use in metropolitan late adolescent population; Assessment of prevalence with self report scales. *Archives of Psychiatry and Psychotherapy, 3,* 11-19.

Moore, J. M. (2002). *Peer abuse or 'bullying' and its impact on adolescents, especially in relation to depression*. (Doctoral dissertation). Retrieved from Dissertation Abstracts International. College of Education and Human Services: Seton Hall University.

Munhall, P.L. (2007). *Nursing research: A qualitative perspective.* (4th ed.). Boston: Jones and Bartlett.

Murphy, K.R., & Myors, B. (2004). *Statistical power analysis: A simple and general model for traditional and modern hypothesis tests* (2nd ed.). NY: Lawrence Erlbaum Assoc.

Najman, J.M. , Hayatbakhshs, M.R., Clavarino, A., Bor,W., O'Callaghan, M.J., & Williams, G.M. (2010). Family poverty over the early life course and recurrent adolescent and young adult anxiety and depression: A longitudinal study. *American Journal of Public Health, 100* (9), 1719-1723.

Najman, J.M., Heron, M.A., Hayatbakhsh, M.R., Dingle, K., Jamrozik, K., Born. W., …Williams. G.M. (2008). Screening in early childhood for risk of later mental health problems: A longitudinal study. *Journal of Psychiatric Research, 42* (6), 694-700. doi: 10.1016/j.jpsychires.2007.08.002

National Association of Community Health Centers. (NACHC) (2007). *Building a primary care workforce for the 21st century.* Robert Graham Center and George Washington University. Retrieved from www.nachc.com/research-reports.cfm.

National Association of Pediatric Nurses and Practitioners (2007). NAPNAP position statement on integration of mental health care in pediatric primary care settings. *Journal of Pediatric Health Care, 21,* 29A-30A. doi:10.1016/j.pedhc.2007.06.006

National Association of Pediatric Nurses and Practitioners. (NAPNAP).(2011). Retrieved from http://www.napnap.org/ProgramsAndInitiatives/KySS/KySSMentalHealthGuide.aspx

National Center for Education Statistics (2007). *Statistical standards*. Retrieved from: http://nces.ed.gov/statprog/2002/stdtoc.asp.

National Health and Nutrition Examination Survey (NHANES). (2006). *National Institute of Mental Health diagnostic interview schedule for children (DISC) questionnaire.* Retrieved from http://www.cdc.gov/nchs/data/nhanes/limited_access/ydq.pdf

National Research Council and Institutes of Medicine, Committee on Children, Youth and Young Adult: Research Advances and Promising Interventions. (NAS-IOM). (2009). Preventing mental, emotional, and behavioral disorders among young people: progress and possibilities. In M.E. O'Connell, T. Boat, & K. E. Warner (Eds.). *Board on young children, youth, and families, division of behavioral and social sciences and education.* Washington, DC: The National Academies Press.

Naylor, M.D. & Kurtzman, E.T. (2011). The role of nurse practitioners in reinventing primary care. *Health Affairs, 29* (5), 893-899.

Nelson, E.E., Leibenluft, E., McClure, E.B., & Pine, D. S. (2005). The social re-orientation of adolescence: A neuroscience perspective on the process and its relation to psychopathology. *Psychological Medicine, 35,* 163-174. doi:10.1017/S0033291704003915

National Institute for Mental Health (NIMH). (2008). Treatment for adolescents with depression study (TADS): 1999. Retrieved from: http://www.clinicaltrials.gov/ct2/show/NCT00006286?term=TADS+NIMH&rank=1

Nunnally, J.C. & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). NY: McGraw-Hill.

Olson, A.L., Kelleher, K.J., Kemper, K.J., Zuckerman, B.S., Hammond, C.S., & Dietrich, A.J. (2001). Primary care pediatricians' roles and perceived responsibilities in the identification and management of depression in children and adolescents. *Ambulatory Pediatrics, 1,*(2), 91-98. doi:10.1367/1539-4409(2001)001<0091:PCPRAP>2.0.CO;2

Olvera, R.L. (2001). Suicide ideation in Hispanics and mixed ancestry adolescents. *Suicide and Life-Threatening Behavior, 31* (4), 416-427.

Overbeek, G. (2006). Co-occurrence of depressive moods and delinquency in early adolescence: The role of failure expectations, manipulativeness, and social contexts. *International Journal of Behavioral Development, 30* (5), 433-443.

Patten, C.A., Gillin, C.J., Farkas, A.J., Gilpin, E.A., Berry, C.C., & Pierce, J.P. (1997). Depressive symptoms in California adolescents: Family structure and parental support. *Journal of Adolescent Health*, *20,* 271-278.

Peiponen, S., Laukkanen, E., Korhonen, V., Hintikka,U., & Lehtonen, J. (2006). The association of parental alcohol abuse and depression with severe emotional and behavioural problems in adolescents: A clinical study. *International Journal of Social Psychology, 52,* 395-407. doi: 10.1177/0020764006065

Piaget, J. (1983). Piaget's theory. In P. Mussen (Ed.). *Handbook of Child Psychology, Vol 1*. (4th ed.). New York: Wiley.

Pincay, I., Martinez, E., & Guarnaccia, P. J. (2007. 'It's like going through an earthquake': Anthropological perspectives on depression among Latino immigrants. *Journal of Immigrant and Minority Health, 9* (1), 17-28.

Polit, D. F., & Beck, C.T. (2006). The content validity index: Are you sure you knows wha's being reported? Critique and recommendations. *Research in Nursing & Health, 29,* 489-497. doi: 10.1002/nur.21047

Polit, D. F., Beck, C.T., & Owens, S.V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health, 30,* 459-467. doi:10.1002/nur.20199

Poznanski, E.O., Freeman, L.N., & Mokros, H.B. (1996). Children's Depression Rating Scale–Revised. *Psychopharmacological Bulletin*, *21,*979–989.

Presnell, K., Stice, E., Seidel, A., & Madeley, M.C. (2009). Depression and eating pathology: Prospective reciprocal relationships in adolescents. *Clinical Psychology and Psychotherapy, 16,* 357-365.

Pullen, L.M., Modrein-McCarthy, M.A.,& Graf, E.V. (2000). Adolescent depression: Important facts that matter. *Journal of Child and Adolescent Psychiatric Nursing, 12* (2), 69-75.

Radloff, L.S. (1991). The use of the Center for Epidemiologic Studies Depression Scale in adolescents and young adults. *Journal of Youth and Adolescence, 20* (2), 149-166.

Rawana, J.S., Morgan, A.S., Nguyen, H., & Craig, S. G. (2010). The relation between eating and weight related disturbances and depression in adolescence: A review. *Clinical Child and Family Psychology Review, 13*, 213-230. doi 10.1007/s10567-010-0072-1.

Reeve, K., Byrd, T., & Quill, B. E. (2004) Health promotion attitudes and practices of Texas nurse practitioners. *Journal of the American Academy of Nurse Practitioners, 16* (3), 125-33.

Rey, J.M., Grayson, D., Majarrad, T. & Walter, G. (2002). Changes in the rate of diagnosis of major depression in adolescents following routine use of a depression rating scale. *Australian & New Zealand Journal of Psychiatry, 36* (2), 229-233.

Reynolds, W. M. (2002). Reynolds Adolescent Depression. (2nd ed.). *Mental measurements yearbook with tests in print, Vol. 16.* Lutz, FLA: Psychological Assessment Resources.

Reynolds, W.M., & Mazza, J.J.(1998). Reliability and validity of the Reynolds Adolescent Depression Scale with young adolescents. *Journal of School Psychology, 36*. (3), 295-312. doi:10.1016/S0022-4405(98)00010-7

Richardson, L.,& Katzenellenbogen, R. (2005). Childhood and adolescent depression: The role of the primary care providers in diagnosis and treatment. *Current Problems in Pediatric and Adolescent Health Care, 35,* 1-24.

Richardson, L.P., Keller, A.M., Selby-Harrington, M.L., & Parrish, R. (1996). Identification and treatment of children's mental health problems by primary care providers: A critical review of research. *Archives of Psychiatric Nursing, 10* (5), 293-303.

Richardson, L.P.; McCauley, E.; Grossman, D.C.; McCarty, C.A.; Richards, J.; Russo, J.E.; … & Katon, W. (2010). Evaluation of the Patient Health Questionnaire-9 items for detecting major depression among adolescents. *Pediatrics, 126* (6), 1117-1123.

Ross, L., Kohler, C.L., Grimley, D.M., & Anderson-Lewis, C. (2007). The theory of reasoned action and intention to seek cancer information. *American Journal of Health Behavior,31* (2), 123-134.

Rush, A.J., Trivdei, M.H., Ibrahim, H.M., Carmody, T.J., Arnow, B., Klein, D.N.,…Kellen, M.B. (2003). The 16-Item quick inventory of depressive symptomatology (QIDS), clinician rating (QIDS-C), and self-report (QIDS-SR): A psychometric evaluation in patients with chronic major depression. *Biological Psychiatry, 54,* (5), 573-583. doi:10.1016/S0006-3223(02)01866-8

Sable, M.R., Schwartz, L.R., Kelly, P.J., Lisbon, E., & Hall, M.A. (2006). Using the Theory of Reasoned Action to explain physician intention to prescribe emergency contraception. *Perspectives on Sexual & Reproductive Health, 38* (1), 20-27.

Sadock, B. J., & Sadock, V.A. (2007). Kaplan and Sadock's synopsis of psychiatry. (10th ed.). Philadelphia: Lippincott, Williams & Wilkins.

Saewyc, E.M., Bearinger, L.H., McMahon, G., & Evans, T. (2006). A national needs assessment of nurses providing health care to adolescents. *Journal of Professional Nursing, 22,* (5), 304-313.

Sagrestano, L.M., Paikoff, R.L., Holmbec,, G.N., & Fendrick, M. (2003). A longitudinal examination of familiar risk factors for depression among inner-city African-American adolescents. *Journal of Family Psychology, 17* (1), 108-120.

Substance Abuse and Mental Health Services Administration (SAMSHA). (2010). Mental health statistics on youth. SAMSHA News (Nov-Dec). Retrieved from http://www.samhsa.gov/samhsaNewsletter.

Sameroff, A.J., Gutman, L.M. & Peck, S.C. (2003). Adaptation among youth facing multiple risks: Prospective research findings. In S.S. Luthar (Ed.). *Resilience and vulnerability: Adaptations in the context of childhood adversities (pp. 364-391).* New York: Cambridge University Press.

Schmitt, M.R., Miller, M.J., Harrison, D.L., & Touchet, B.K. (2010). Relationship of depression screening and physician office duration in a national sample. *Psychiatric Services, 61*(10), 1126-1131.

Scott, E.G., Luxmore, B., Alexander, H., Fenn, R.L., & Christopher, N.C. (2006). Screening for adolescent depression in a pediatric emergency department. *Academic Emergency Medicine, 13* (5), 537-542.

Seth, P., Shilpa, N.P., Sales, J. M., DiClemente, R.J., Wingood, G.M., & Rose, E.S. (2011). The impact of depressive symptomatology on risky sexual behavior and sexual communication among African American adolescents. *Psychology, Health & Medicine, 16* (3), 346-356. doi: 10.1080/13548506.2011.554562.

Shaffer, D., Fisher, P., Duncan, M.K., Davies, M., Piacentini, J., …Schwab-Stone, M.E. (2000). The NIMH diagnostic interview schedule for children version 2.3 (DISC-2.3)*:* Description, acceptability, prevalence rates, and performance in the methods for the Epidemiology of Child and Adolescent Mental Disorders Study (MECA). *Journal of American Academy of Child and Adolescent Psychiatry, 35***,** 865–877*.*

Shafii, M. (2003). School violence, depression, and suicide. *Journal of Applied Psychoanalytic Studies, 52* (2), 155-169. doi: 10.1023/A:1022987703301

Sharp, L.K., & Lipsky, M.S. (2002). Screening for depression across lifespans: A review of measures for use in primary care settings. *American Family Physician, 66* (6), 1001-8.

Sheeber, L.B., Davis, B., Leve,C., Hops, H., & Tildesley, E. (2007). Adolescents' relationships with their mothers and fathers: Associations with depressive disorder and subdiagnostic symptomatology. *Journal of Abnormal Psychology, 117,* 144-154. doi: 10.1037/0021-843X.116.1.144

Shrier, L.A., Harris, S.K., & Beardslee, W.R. (2002). Temporal associations between depressive symptoms and self-reported sexually transmitted disease among adolescents. *Archives of Pediatric Adolescent Medicine, 156*, 599-606

Spence, S.H., Najman, J.M., Bor, W., O'Callahan, M.J., & Williams, G.M. (2002). Maternal anxiety and depression, poverty and marital relationship factors during early childhood as predictors of anxiety and depressive symptoms in adolescence. *Journal of Child Psychology and Psychiatry, 43* (4), 457-469. Doi: 10.1111/1469-7610.00037.

Steinwald, A.B. (2008). Addressing healthcare workforce issues for the future. *Hearing before the United State Senate Committee on Health, Education, Labor and Pensions,* 110th Congress, 2nd Session. Retrieved from http://www.gpo.gov/fdsys/pkg/CHRG-110shrg40835/pdf/CHRG-110shrg40835.pdf

Stice, E., & Bearman, S.K. (2001). Body-image and eating disturbances and depressive symptoms in adolescent girls: A growth curve analysis. *Developmental Psychology, 37*, 597-607.

Stice, E., Ragan, J., & Randall, P. (2004). Prospective relations between social support and depression: Differential direction of effects for parent and peer support. *Journal of Abnormal Psychology, 113,* 155-159. doi: 10.1037/0021-843X.113.1.155

SurveyMonkey (2011). Security statement. Retrieved from http://www.surveymonkey.com/mp/policy/security/

Swenson, D.E. (2006). Advanced Registered Nurse Practitioners: Standards of care and the law. *Journal of Legal Nurse Consulting, 17,* (4), 3-6.

Tanner, J.M. (1962). *Growth at adolescence, with a general consideration of the effects of hereditary and environmental factors upon growth and maturation from birth to maturity* (2nd ed.). Oxford: Blackwell Scientific Publications.

Taylor, O.D. (2011). Adolescent depression as a contributing factor to the development of substance use disorders. *Journal of Human Behavior in the Social Environment, 21* (6), 696-710. doi: 10.1080/10911359.2011.583519.

Texas Board of Nursing (2010). Currently licensed Texas RNs recognized as Advanced Practice Registered Nurses by county and recognition group. Retrieved from http://www.bon.state.tx.us/about/stats/10-apn.pdf

Texas Department of State Health Services. (2007). Treating children with mental or behavioral diagnosis. Retrieved from http://www.txhealthsteps.com/default.asp

The Robert Graham Center. (2005). *Physician assistant and nurse practitioner workforce trends.* Retrieved from http://www.graham-center.org/x589.xml.

Tisher, M. & Lang, M. (1983). The Childrens Depression Scale: Review and further developments. In D. Cantwell & G. Carlson (Eds.). *Affective Disorders in Childhood and Adolescence*. New York: SP Scientific Books

Touger-Decker, R. (2006). Survey research: A research methodology. *Oncology Nutrition Journal, 14* (1), 9-11. doi:10.1177/075910639705500106

Treutler, C.M., & Epkins, C.C. (2003). Are discrepancies among child, mother, and father report on children's behavior related to parents' psychological symptoms and aspects of parent-child relationships? *Journal of Abnormal Psychology, 31* (1), 13-27. doi: 10.1023/:1021765114434.

Uddin, M; Koenen, K.C., de Los Santo, R., Bakshis, E., Aiello, A.E., & Galea, S. (2010). Gender differences in the genetic and environmental determinants of adolescent depression. *Depression and Anxiety, 27* (7), 658-666.

United States Department of Health and Human Services. (US-DHHS). (2004). 45 CFR 101 (b). Retrieved from http://www.hhs.gov/ohrp/

United States Department of Health and Human Services.(US-DHHS) (2009). Suicide in the United States: Statistics and prevention. Retrieved from: http://www.nimh.nih.gov/health/publications/suicide-in-the-us-statistics-and-prevention/index.shtml

United States Preventative Services Task Force. (USPSTF) (2007). Screening for high blood pressure in adults. Retrieved from http://www.uspreventiveservicestaskforce.org/uspstf/uspshype.htm

United States Preventative Services Task Force). (USPSTF) (2009). Retrieved from http://www.uspreventiveservicestaskforce.org/uspstf/uspsaddepr.htm

University of Texas at Arlington. (UTA). (2011). *Human subject protection: IRB protocol.* Retrieved from http://www.uta.edu/ra/oric/human/sops.htm

Voisin, D.R., Harris, T.T., Crosby, R.A., Salazar, L.F., & DiClemente, R.J. (2011). Examining the relationship between psychotropic medication use and testing positive for Chlamydia and Gonorrhea among detained adolescents. *Children and Youth Services Review, 33,* 1527-1530. doi: 10.1016/j.childyouth.2011.03.016.

Walsh, J.M.E., & Terdiman, J.P. (2003). Colorectal cancer screening: Scientific review and clinical applications*. Journal of the American Medical Association (JAMA), 289* (10), 1288-1296. Retrieved from http://www.netkisr.com/technical_papers/JAMA2.pdf

Watson, E., & Hillman, H. (2010). Advanced practice registered nursing: Licensure, education, scope of practice and liability issues. *Journal of Legal Nurse Consulting, 21* (3), 25-29.

Williams, S.B., O'Connor, E. A., Eder, M., & Whitlock, E. P. (2009). Screening for child and adolescent depression in primary care settings: a systematic evidence review for the US Preventive Services Task Force. *Pediatrics, 123* (4), 716-735.

Winter, L.B., Steer, R.A., Jones-Hicks, L; & Beck, A.T. (1999).Screening for major depression disorders in adolescent medical outpatients with the Beck Depression Inventory for Primary Care. *Journal of Adolescent Health, 24* (6), 389-394.

Wintersteen, M.B. (2010). Standardized screening for suicidal adolescents in primary care. *Pediatrics, 125*, 938-944.

Wintersteen, M.D. (2011). Universal of indicated screening in primary care? *Psychiatric Services, 62* (2), 221.

World Health Organization (2008). Breast cancer: Mortality and screening. Retrieved from http://www.who.int/cancer/detection/breastcancer/en/

Wu, P., Hoven, C.W., & Cohen, P. (2001). Factors associated with use of mental health services for depression by children and adolescents. *Psychiatric Services, 52,* 189-195. doi:10.1176/appi.ps.52.2.189

Yi, C.H., Martyn, K., Salerno, J. & Darling-Fisher, C.S. (2009). Development and clinical use of Rapid Assessment for Adolescent Preventive Services (RAAPS) Questionnaire in school-based health centers. *Journal of Pediatric Health Care, 23 (1),* 2-9. doi 10.1016/j.pedhc.2007.09.003

Yurgelun-Todd, D. (2007). Emotional and cognitive changes during adolescence. *Current Opinion in Neurobiology, 17*, 251-257.

Zahn-Waxler, C., Shirtcliff, E.A., & Marceau, K. (2008). Disorders of childhood and adolescence: Gender and psychopathology*. Annual Review of Clinical Psychology, 4* (275), 275-303. doi: 10.1146/annurev.clinpsy.3.022806.091358

Zalsman, G., Brent, D., & Weersing, V. (2006). Depression in children and adolescents: An overview. *Child and Adolescent Psychiatric Clinics in North America, 15* (4), 827-841.

Zamboanga, B.L. (2009). Do alcohol expectancy outcomes and valuations mediate peer influences and lifetime alcohol use among early adolescents? *The Journal of Genetic Psychology: Research and Theory on Human Development, 170* (4), 359-376. doi: 10.1080/00221320903218380.

Zuckerbrot, R.A., & Jensen, P.S. (2006). Improving recognition of adolescent depression in primary care. *Archives of Adolescent Pediatric Medicine, 160,* 694-704.

Zung W. W. K. (1965). A self-rating depression scale. *Archives of General Psychiatry, 12*, 63-70.

BIOGRAPHICAL INFORMATION

Carol Lieser received her B.S., Nursing in 1972, from Berea College in Berea, Kentucky and has worked in many areas of nursing since then. Experience includes medical surgical, oncology, obstetrics, pediatrics, and mental health nursing. In 1997, she obtained her M.S., Nursing from the University of Texas in Arlington and was certified as a pediatric nurse practitioner. As a PNP, she worked primarily in school based health centers until returning to UTA in 2004. She obtained her Masters in Theological Studies from Ave Maria University in Ipsilanti, Michigan in 2003. She worked simultaneously on her PhD in nursing and a post master's certification as a psychiatric mental health nurse practitioner (PMHNP). In August, 2009, she obtained certification as a PMHNP and has worked in a publically funded mental health clinic since then. Her research interests are in mental health: adolescent depression issues and mothers with mental health problems. She will obtain her PhD in the spring of 2012. She will work at the University of Arlington College of Nursing full time as a clinical faculty member in the master's psychiatric mental health nursing program beginning in the fall of 2012. She will also continue her mental health nurse practitioner practice where she cares for adults with depression, bipolar disorder, and schizophrenia. She is professed as a Secular Franciscan and holds offices at both the local and regional levels in this order. She and her husband have been married since 1975 and have four children.