Screening for Adolescent Depression in the Primary Care Setting Using the CES-DC

Sharolyn Dihigo, RN, MSN, CPNP-PC

The University of Texas at Arlington School of Nursing

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Ronda Mintz-Binder, DNP, RN, CNE

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Abstract

Background and Significance: The identification and treatment of adolescent depression is a national health priority. The estimated prevalence of a major depressive disorder (MDD) in adolescents ages 13 to 18 years is approximately 5.6% with girls suffering with more depression than boys.

Purpose: The purpose was to compare the prevalence of depressive symptoms before and after implementation of the CES-DC (Center of Epidemiological Studies Depression Scale for Children; Radloff, 1991) screening tool for depression in a private pediatrician’s primary care clinic. Research questions compared the total CES-DC scores across age groups and gender. Prevalence results were comparable to national data. Parent’s and teen’s perceptions were also examined.

Results: Fifty teens and fifty parents completed the study. The use of the CES-DC screening tool resulted in a greater number of teens with depressive symptoms (10:50, 20%) than using the HEADDSS assessment (6:784, <1%). Females (8:50, 16%) were found to have more depressive symptoms than males (2:50, 4%) which is consistent with national prevalence data. Teens felt this screening was an important part of their healthcare, and teens who thought they had depressive symptoms scored positively on the CES-DC. Even when parents valued the importance of screening, they were incorrect in judging whether their teen was having depressive symptoms. Less than 10 percent of parents thought their teens had depressive symptoms.

Conclusions: The U. S. Preventive Services Task Force (USPSTF) Recommendation in 2009 recommends routine screening for depression in 12 to 18 year old adolescents when services are available for appropriate follow up (B Recommendation). Screening was met with little resistance, helped identify more depressive symptoms in teens, and was not a burden to the practice; therefore, all health care providers should consider implementing these screening guidelines into practice.
Screening for Adolescent Depression in the Primary Care Setting

Introduction

The identification and treatment of a major depressive disorder (MDD) in adolescents ages 13 to 18 years is a national health priority with an estimated prevalence of approximately 5.6% (Williams, O'Connor, Eder, & Whitlock, 2009) with girls suffering with slightly more depression than boys, 5.9% versus 4.6%, respectively (Williams et al., 2009). Signs of depression in children and adolescents are often overlooked by parents and health care providers, and considered a “normal” part of puberty (National Institute of Mental Health, 2009a). Despite an increased awareness of this silent epidemic in teens, depression continues to go unrecognized and untreated. Approximately 75% of these children and adolescents are seen routinely in a primary care setting yet only 16-38% of primary health care providers correctly identify the presence of a mental health condition (Melnyk, 2009).

Signs of depression in a school-age child may include frequent complaints of headaches, stomachaches, other somatic complaints, school refusal, sadness, irritability, crying spells, tantrums, or difficulty separating from parents (Melnyk & Moldenhauer, 2006; National Institute of Mental Health, 2009a). An adolescent may experience sadness, hopelessness, poor sleep, decreased appetite or concentration, loss of pleasure in activities, irritability, anger, and withdrawn behavior (Melnyk, 2009). Depression interferes with social functioning, school performance, and interpersonal relationships.
Background and Significance

The lifetime prevalence of a major depressive disorder in teenagers is approximately 20% (Zuckerbrot & Jensen, 2006) with higher rates among minority students and adolescents (Barclay, 2010). One out of every four children has a mental health disorder and less than 25% of those receive any treatment (Melnyk & Moldenhauer, 2006; Melnyk, 2006). Adolescents suffering from depression are at an increased risk of suicide, and teens often “self-medicate” through substance use and high risk sexual behavior (Hallfors, Waller, Bauer, Ford, & Halpern, 2005). The risk of suicide rises in adolescent males with depression, and suicide remains the third leading cause of death among young males ages 15 to 24 (National Institute of Mental Health, 2009a). Early identification and treatment is crucial for adolescents to develop healthy relationships and healthy emotional, social, and behavioral development (National Institute of Mental Health, 2009a).

The U.S. Preventive Services Task Force (USPTF) Recommendation Statement released March 31, 2009, recommended routine screening for depression in 12 to 18 year old adolescents in the primary care setting when appropriate mental health services including confirmation of diagnosis, psychotherapy, and follow up are available. The recommendation statement also included screening for any age child or teen with one or more of the four risk factors: parental depression, a comorbid mental health condition, a chronic health problem, or having experienced a recent negative life event (Williams et al., 2009). With the increasing prevalence of adolescent depression, health providers need to begin implementing these screening guidelines into practice.
Review of the Literature

A systematic review was conducted prior to the development of this pilot study in order to critically evaluate the current evidence regarding the use of a depression screening tool in the adolescent population. The search was narrowed to specifically examine the use of the Center for Epidemiological Studies-Depression Scale for Children (CES-DC; Radloff, 1991) or the Beck (1996) Depression Inventory (BDI-II). Due to the lack of studies in the primary care setting, screenings taking place in the emergency room or school setting were also included.

Formulating a PICO Question

A PICO (P, Population; I, Intervention; C, Comparison, and O, Outcome) question was written to guide the search. In adolescents ages 12-18 years (P), is the use of a screening tool for depression (I), compared with the usual standard of care (C), more accurate in detecting depression (O)? The goal of the PICO question was to determine if enough evidence existed to support screening children and adolescents for depression using an appropriate screening tool. A well designed PICO question facilitated the search strategy and guided the selection of key words.

Search Strategies

Multiple databases were searched: Medline, Cochrane Library, CINAHL, Eric, PsycInfo, Google Scholar, and the Agency for Healthcare Research and Quality. Key words included mental health, depression and depressive disorder, adolescents, teens, screening, CES-DC, and Beck or Beck Depression Inventory (BDI-II). The search included examination of published and unpublished works and a complete hand search of the reference lists of the systematic reviews.
and other relevant articles from 2005 to 2010. All articles examining the use of a screening tool specific for depression in the adolescent population were included. Because so few studies were conducted in the primary care setting, those taking place in schools and emergency rooms were also included. Sixteen studies met inclusion criteria. A 1999 study was included as an exception because it was one of the few taking place in primary care.

**Appraising the Evidence**

The search revealed three systematic reviews on adolescent depression screening and no randomized controlled trials. Six descriptive studies were found using either the CES-DC (Radloff, 1991) or Beck (1996) Depression Inventory (BDI-II). Seven other studies with cross sectional, predictive, or correlational designs met inclusion criteria using the designated screening tools.

The most robust systematic review is the U. S. Preventive Services Task Force (USPSTF) Recommendation Statement (2009) which updated the 2002 Recommendation Statement concerning screening and treatment for major depressive disorder in children and adolescents. Williams et al. (2009) helped to identify key questions to guide the literature search for the USPSTF. In this study, no data were found describing health outcomes among screened or unscreened populations (Williams et al., 2009). No studies examined the harms of screening. Williams et al. (2009) reported the literature was limited on the use and accuracy of screening tools; however, several tools performed well. The third systematic review by Zuckerbrot and Jensen (2006), examined the evidence for psychometric data gathered in primary care settings, patient outcome data, and the identification processes currently in use. These investigators concluded self report screening tools are available and have adequate psychometric properties
and feasibility for use in primary care settings. Zuckerbrot and Jensen (2006) discussed two important findings: self-report screening tools were more accurate at identifying depression than physician interviews and health care providers who rely on the patient’s presenting chief compliant to detect depression will miss many teens with depression or depressive symptoms.

Zuckerbrot and Jenson (2006) also found in regards to the usual standard of care, physicians who received additional training improved their ability to detect depression but not to the same level as self-report tools. Although the assessment (home, education, activities, drug use and abuse, depression, sexual behavior, and suicidality; Stephens, 2006) is well known and widely used in adolescent medicine, no studies were found examining its effectiveness in detecting depression. Zuckerbrot and Jenson (2006) did not find a single study that combined the three essential elements: a screening component, an intervention, and an assessment of patient outcomes at follow up.

No randomized controlled trials (RCT) were found in the literature examining the screening process for MDD. Most RCT compared pharmacological interventions, psychotherapy, or a combination of both. One predictive study examined risk behaviors of adolescents to determine if adolescents self-medicate depression with substance use or high risk sexual behavior using the CES-DC (Radloff, 1991) in the large dataset from the National Longitudinal Study of Adolescent Health (Hallfors et al., 2005). Overall, the findings indicated sex and drug behaviors did predict a higher likelihood of depressive symptoms especially among girls (Hallfors et al., 2005). However, depression did not predict high risk behavior (Hallfors et al., 2005).
Scott, Luxmore, Alexander, Feen, and Christopher (2006) described the prevalence of depressive symptoms in adolescent patients presenting to an emergency room in Akron, Ohio using the BDI-II (Beck, et al., 1997). Significant differences were noted among certain patients. Trauma patients were more likely to refuse screening; patients presenting with a psychiatric diagnosis were more likely to be admitted; and patients with a previous history of a mental illness reported significantly more depressive symptoms. Another study conducted in an emergency room setting compared the CES-DC (Radloff, 1991) with a two question screening tool and found 37% had a positive screen using the CES-DC with 21% being positive for suicidality and 40% screened positive using the two-question screen (Rutman, Shenassa, & Becker, 2008). Consistent with other literature, these researchers found higher rates of depressive symptoms among girls (Rutman et al., 2008).

Several descriptive studies examined the prevalence of depressive symptoms in school settings, racial differences, and race-specific physical symptoms. Lazaratou, Dikeos, Anagnostopoulos and Soldatos (2010) used the CES-DC (Radloff, 1991) screening tool and found significant differences in scores between males and females. Females reported greater depressive symptoms and males reported more depressive symptoms in the older teen years in a population of high school students in Athens, Greece (Lazaratou et al., 2010).

In the United States (U.S.), Rhee (2005) examined racial-specific prevalence of 10 physical symptoms including headache, stomachache, musculoskeletal pain, fatigue, sore throat, dizziness, feeling hot, chest pain, painful urination, and cold sweat among a racially/ethnically diverse adolescent sample. Headache was the most common complaint of White adolescents (32%) (Rhee, 2005). American Indian adolescents had greater complaints of musculoskeletal pain (35%), feeling hot (14%), and chest pain (10%) than others in the study (Rhee, 2005).
Blacks reported more urinary symptoms (4%) (Rhee, 2005). Differences between White adolescents and Black adolescent were significant for family income and depression. Overall depression scores were higher in Black adolescents when compared to White adolescents. The complaints of headache and musculoskeletal pain were consistent and remained significant in White adolescents regardless of family income or depressive symptoms (Rhee, 2005).

Robles-Pina, Defrance, and Cox (2008) examined school retention as a predictor of depression in teens in a Hispanic, urban population. No statistically significant differences were found between males and females in self concept, school retention, past feelings of sadness, or grade point average (GPA). Females had higher mean scores on the CES-DC (Radloff, 1991) than males with the gender difference showing a low effect size (Robles-Pina, Defrance, & Cox, 2008). Based on the scoring of the CES-DC, data suggested 36% of Hispanic adolescents had scores in the range of moderate to severe depression. Adolescents retained in school had lower self concept, greater past feelings of depression, a lower GPA and higher rates of depression than non-retained Hispanics. All of these results were statistically significant. Robles et al. (2008) found the highest predictor of depression was self concept.

Chisolm, Lima, Gardner, and Kelleher (2009) used the CES-DC (Radloff, 1991) screening tool and the Patient Health Questionnaire for Adolescents (Johnson, J., Harris, E., Spitzer, R., & Williams, J., 2002) single question tool for detecting adolescent depression and observed the use of mental health services following screening. In this population (N=996), 24% were positive for depression and 14% were positive for suicidal thoughts. Only 16% of adolescents screened positive for depression accessed mental health care services within the next 180 days (p<.01) (Chisolm et al., 2009). It is important to note adolescents who acknowledged having suicidal thoughts were eight times more likely to use behavioral health services compared
with those who screened negative for suicidal ideation. Overall, the researchers found adolescents screened were more likely to seek either medical or behavioral health services. One plausible explanation was the screening process opened lines of communication between the patient and the provider. However, over 80% of teens who screened positive for depression or suicidal thoughts did not seek any care at all within the 180-day study timeframe (Chisolm et al., 2009).

Two descriptive studies were found that were conducted a primary care setting. Zuckerbrot, Maxon, Pagar, Davies, Fisher, & Shaffer (2007) conducted the first and only study examining the feasibility and acceptability of screening for adolescent depression in primary care. The researchers were concerned with the burden screening placed on the practice and the effect on the parent-provider relationships. The average time for completion of a pencil and paper screening tool was 4.6 minutes, and the refusal rate for screening was low (Zuckerbrot et al., 2007). Providers and parents reported greater satisfaction than dissatisfaction with the screening process and the time burden was not significant (Zuckerbrot et al., 2007). At the conclusion of the study, the providers wished to continue use of the paper and pencil scale.

Winter, Steer, Jones-Hicks, and Beck (1999) performed one of the few studies looking at the screening process of adolescent depression in the primary care setting, using one of the most reliable screening tools, the Beck (1997) Depression Inventory for Primary Care. This report focused primarily on the psychometric properties of the BDI-PC. Although the sample size was small with 100 subjects, 50 females and 50 males, the recruitment of subjects was halted because the effect size was so large (Winter et al., 1999). Fifty adolescents had a score of zero. Eighty-nine adolescents were screened negative and 11 adolescents screened positive for a MDD
(Winter et al., 1999). The mean BDI-PC score was approximately nine times higher than the mean BDI-PC score of the 89 negatively screened teens (Winter et al., 1999).

**Discussion of Two Screening Tools for Primary Care Use**

This systematic review examined the available research using screening tools to help detect adolescent depression. The Beck (1996) Depression Inventory (BDI-II) is a widely accepted instrument for outpatient screening, performs consistently, and is linked to the Diagnostic Statistical Manual (DSM-IV) criteria (American Psychological Association, 2002). However, there are several disadvantages of using the BDI-II in a primary care setting. First of all, the tool must be purchased, and the provider must have additional training before its use. The BDI-II has also been criticized for having a high item difficulty (Scott, et al., 2006) and may require additional assistance for completing it. The BDI-II screening tool appears to be used more in intervention studies examining adolescent depression and various treatment options.

The Center of Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977) has performed inconsistently in studies older than 2005. The CES-D has been criticized for not being linked to the Diagnostic and Statistical Manual (DSM) criteria (Lazaratou et al., 2010). The tool has gained greater popularity and has been utilized more in the past few years as evidenced by the number of research articles in this systematic review using the CES-D. This tool is readily available free of charge and does not require additional training for its use. The tool's reliability, validity, mean scores, and case rates of adolescent depression remained consistent in the research articles presented herein. It is concluded the CES-D is an appropriate, feasible tool for use in screening adolescents in the primary care setting.
Theoretical Framework and Algorithm

The Pathways to Care for Depression Through Primary Care by Asnarow, Jaycox, and Anderson (2002) was chosen as the theoretical framework (Appendix A) describing the process in which adolescents present to the primary care setting and then move through the health care system. A more specific model describing the process in which an adolescent presents to the primary care office and then proceeds through a screening process for identification and treatment is depicted in the Framework Algorithm for Screening for Adolescent Depression in the Primary Care Setting (Appendix B) created by Dihigo (2010). The Pathways to Care Model is a heuristic model designed to guide the delivery of care for depressed youth in the primary care setting (Asarnow, Jaycox, & Anderson, 2002). This model addresses many potential barriers confronted in the primary care setting. First of all, the patient must seek care and present to the primary care office for a visit. Although most adolescents do visit a health care provider, universal access to health care is not guaranteed. Secondly, adolescents may present to primary care settings that are not prepared to detect and treat mental health conditions such as emergency rooms, urgent care settings, or specialty practices. Two of the largest barriers for proper detection of a mental health complaint are the time allowed for a health care visit and the provider-patient relationship (Asarnow et al., 2002). Primary care visits tend to be brief especially when compared to the lengthier visits in offices that specialize in mental health.

Another potential barrier is whether or not the adolescent or the family members perceive a need for mental health screening or evaluation. Many people avoid mental health treatment due to the stigmatization and reluctance to accept help (Asarnow et al., 2002). Furthermore, parents may be unaware of the adolescent’s distress and may simply think these symptoms are typical of adolescent behavior or “just a phase they are going through” (National Institute of
Mental Health, 2009a; National Institute of Mental Health, 2009b). Adolescents often have difficulties sharing their concerns with others including their parents. This creates further complexities and barriers for helping them obtain the care they need (Asarnow et al., 2002). The fourth step in the model focused on the need for education for parents and adolescents. Providers must be able to discuss available treatment options, decide whether the teen can be treated in the primary care setting or referred to a mental health specialist. Lastly, the family and adolescent must use the mental health services suggested and follow through with the recommended treatment plan (Asarnow et al., 2002).

The Framework Algorithm for Screening for Adolescent Depression in the Primary Care Setting (Dihigo, 2010) describes the steps necessary to screen for depression in a primary care setting beginning with the presentation of the adolescent to the office for either a well child or sick visit. Upon arrival to the clinic, the adolescent and their family would be approached to participate in the screening program. The family and adolescent are given the option to be screened or to decline. If the teen or family decline, no screening would be completed but it may be offered at future health care visits. If the teen agrees to screening, the teen would be given the CES-DC (Radloff, 1991) screening tool to be completed with pen and paper. The tool would be scored by the provider and deemed either positive or negative for the risk of depression. Patients with positive scores would be offered the opportunity for further evaluation in the primary care setting or referred to a mental health specialist. Patients with negative scores or little risk of depression would be given their scores and no referral or immediate follow up would be planned. With the implementation of a screening program in a primary care setting, ideally all adolescents would have the opportunity to be screened annually.
Research Problem and Current Recommendations

After a thorough examination of the literature and research studies available regarding the screening processes of adolescent depression, several gaps in the literature have been identified. First of all, few randomized controlled trials investigated the screening process in primary care settings. Only one study looked at the feasibility of screening. Little research exists regarding screening in adolescents and almost no literature exists for screening children. In addition, insufficient evidence exists for screening and treatment with no direct evidence on outcome studies. No studies examine all three critical elements: screening, treatment, and outcomes.

The 2009 USPSFT Recommendation Statement in conjunction with the National Institute of Mental Health has increased awareness of the need for screening and made providers more aware of the prevalence of adolescent depression (Williams et al., 2009; National Institute of Mental Health, 2009a; National Institute of Mental Health, 2009b). The American Academy of Pediatrics and the National Association of Pediatric Nurse Practitioners have launched special tool kits and fellowship programs promoting screening of mental health issues in the primary care setting (Melnyk, 2006; National Institute of Mental Health, 2009b). Zuckerbrot, Maxon, Pagar, Davies, Fisher, & Shaffer (2007) published the first feasibility study showing the burden of screening in the primary care practice was hardly a burden at all with screening taking an estimated 4.6 minutes to complete. The researchers also reported self-report screening tools are available and have adequate psychometric properties and feasibility for use in primary care settings (Zuckerbrot, et al., 2007). Furthermore, patients and parents were more satisfied with the care they received. The conclusions of this study found instituting a universal screening program for depression in practice settings using a standardized screening tool was met with little resistance from parents and patients and was well received by providers (Zuckerbrot, et al.,
(2007). The implications for practice are in favor of instituting a universal screening program for depression in adolescent's ages 12 to 18 years when mental health services are available to aid in accuracy of the diagnosis and initiation of treatment and follow up are in place in accordance with the USPSTF 2009 Recommendation (U. S. Preventive Services Task Force, 2009). Primary care practice settings with available mental health support should begin screening adolescents annually for MDD at well or acute visits.

**Research Purpose**

The purpose of this descriptive pilot study was to examine the prevalence of depressive symptoms among adolescents' ages 12-18 years of age before and after implementation of the CES-DC (Radloff, 1991) screening tool for depression in a private pediatrician's primary care setting. Age, gender, and ethnicity comparisons were made for two groups: younger teen's ages 12 to 15.5 years of age compared to older teens 15.6 to 18 years of age. Prevalence of depressive symptoms (total scores on the CES-DC) were compared to similar studies. In addition, this pilot study examined the interest (number of patients completing the screening), the number of refusals, and the burden of screening on the primary care practice (whether the screening tool could be completed in less than 5 minutes). Furthermore, the patient's and parent's perceptions of the screening process were examined.

**Research Questions**

(1) In adolescents' ages 12-18 years, did the use of the CES-DC screening tool identify a greater number of adolescents with depressive symptoms than the usual standard of care (HEADDSS Assessment)?
(2) Is there a difference in the total CES-DC scores (the amount of depressive symptoms) between younger teens ages 12-15.5 years of age and older teens 15.6-18 years of age?

(3) Is there a relationship between gender and the total CES-DC scores (the amount of depressive symptoms) or in different ethnic groups?

(4) Is the data gathered in this pilot study comparable to national data for depressive symptoms detected through screening?

(5) What was the interest (number of patients completing screening), the refusal rate, and why did patients refuse screening?

(6) What are the patient’s and parent’s perceptions of the screening?

**Methods**

**Research Design**

The design for this pilot study is a comparative descriptive research design because there is no proposed treatment or intervention. This type of research design is utilized when there is a need to gather more information about a particular population or area of study (Burns & Grove, 2009). Due to the limited research in adolescent depression, use of screening tools for depression in adolescents, and depression screening in the primary care setting, this study addressed the prevalence rates before and after implementation of the CES-DC (Radloff, 1991) screening tool, comparison of younger versus older adolescents in rates of depression, and examine the patient’s and parent’s perceptions of the screening process. The prevalence rates for depression in this private practice setting were compared to national prevalence data. A retrospective chart study was completed examining the prevalence of the depression diagnosis in
the six months prior to implementation of the CES-DC screening tool. This allowed for the comparison of prevalence rates of depressive symptoms in order to address the research question comparing the usual standard of care, the HEADDSS assessment questions (Stephens, 2006) asked during a well child exam, and implementation of the screening tool for depression.

Sample

The population included every adolescent patient who was a new or established patient scheduled for a well child exam at the Pediatric Center of Las Colinas (PCLC) and between the ages of 12 and 18 years during the months of May, June, July, and August 2011 that can read and write in English. Adolescents may be scheduled with any of the three providers at the PCLC which included two full time board certified pediatricians and one part time board certified pediatric nurse practitioner in this suburban, private practice. All adolescents were offered to be included as long as they had not completed the CES-DC (Radloff, 1991) screening tool or had not been diagnosed with depression in this clinic six months prior to the start of the study. Patients were not excluded based upon previous diagnosis of mental health disorders by other providers, comorbid diagnoses, or previous diagnosis of depression.

Sampling Plan

Due to the nature of this descriptive pilot study and the data collection time frame, a convenience sampling method was used. Any adolescent patient that was an active patient at the PCLC in Irving, Texas had the potential to be enrolled in the study after consent was obtained. Any adolescent between the ages of 12 and 18 years and their parent were asked to participate in the pilot study. Parents had to complete the consent form prior to asking for the adolescent’s assent.
A total of 104 subjects were asked to participate in the study. One hundred subjects were enrolled which consisted of parent and teen dyads. Four subjects refused screening for various reasons. These included one parent stating, “He does not have those symptoms;” one teen did not want to be screened; and two other teens did not want to “fill out forms.” Overall the refusal rate was low. After explaining the purpose of the study and obtaining parental consent, the adolescent assent was explained and completed (Appendix C). The parents were given a folder with a demographic information sheet (Appendix D) and a four question parent questionnaire (Appendix E) to complete. At the same time, the adolescent was given a folder with the CES-DC tool (Appendix F) and a five question teen questionnaire (Appendix G) to complete. The forms were completed prior to the visit with the health care provider.

**Discussion of Data Collection Process**

Patient enrollment began when the patient presented to the PCLC for a well child exam on or after May 15, 2011 through August 8, 2011. Once a patient signed in to be seen, potential study subjects were offered screening for depression. Each parent and patient in the correct age group (12 to 18 years of age) received an explanation of the screening process by the medical assistant. Both the parent and adolescent had to agree to the screening. If either parent or adolescent refused to participate, a reason for refusal was documented in the clinical project log (Appendix H). If the parent and adolescent dyad agreed to participate, the parent was given the consent form to complete. The adolescent’s assent to participate was documented and witnessed on the appropriate form by the medical assistant or principal investigator. Next, the parent was given the demographic form to complete while the adolescent completed the CES-DC (Radloff, 1991) screening tool. Both were given a survey questionnaire to complete regarding their thoughts and feelings about the screening process. The medical assistant and the principal
investigator checked all forms for completion. All study data were stored in a secure and designated location. The principal investigator, Sharolyn Dihigo, completed the scoring of all CES-DC forms and provided a report to the families as to whether their adolescent needed to be scheduled for further evaluation or referred to a mental health specialist. The number of referrals for higher mental health care was tracked using the tracking form in Appendix I. All study materials were kept confidential at all times and strictly adhered to current guidelines for handling medical information as directed by the Health Insurance Portability and Accountability Act (HIPAA) of 1996.

**Measurement Methods**

The demographic data collection tool included the age and birth date of the patient, gender, ethnicity, current grade in school, any previous patient history of depression, any family history of depression. Socioeconomic status was collected as well as the length of time the patient has been an active patient at the PCLC. The final three questions captured data regarding the patient’s previous mental health history.

The CES-DC Scale is a 20-item self-report scale intended to detect depressive symptomatology in the general population and was tested specifically in the adolescent population in 1991 (Radloff, 1991). The CES-DC is written on a third grade reading level. The tool’s reliability, validity, mean scores, and case rates of adolescent depression remain consistent in the literature and have found to be similar across a variety of demographic characteristics (Radloff, 1991). The tool’s internal consistency measured by the Cronbach’s alpha is 0.85 in community samples and 0.90 in psychiatric samples (Radloff, 1991). The test-retest reliability demonstrated moderate correlations \((r=0.51-0.67)\) in studies ranging from two to eight weeks in length. The concurrent validity of the CES-D was evaluated in comparison to other similar
scales and showed high correlation coefficients. The total cut off score of 16 has been used to screen for major or minor depressive symptoms with a sensitivity of 0.64 and a specificity of 0.94 in a large community sample (Boyd et al., 1982). The CES-DC Scale was developed in 1980 for use in children and adolescents by Weissman, Orvaschel, and Padian (1980) having almost identical self-report statements as the original CES-D. The cut off score for the CES-DC is 15; scores higher than 15 indicate higher depressive symptoms and are considered to be significant. In conclusion, the CES-DC is an appropriate tool to use to screen adolescents in the primary care setting.

Administration and Scoring

The CES-DC (Radloff, 1991) is a paper and pencil screening tool and can be easily and quickly scored by hand. Possible scores range from zero to 60 points. Each item is scored according to the response with a zero equal to “Not at all,” one equals “A little,” two equals “Some,” and three equals “A lot.” Items four, eight, twelve, and sixteen are written positively and are scored in the opposite order: three equals “Not at all,” two equals “A little,” one equals “Some,” and zero equals “A lot.” Higher scores on the CES-DC indicate greater depressive symptoms but can only be used as an initial step in the management of the patient. Further evaluation is warranted for those identified with positive depressive symptoms during the screening.

Survey of Perceptions of Screening for Patient and for Parent

The parent and patient were asked to complete a separate four or five question survey about their screening experience. The surveys included statements and the opportunity to respond with “Strongly Agree,” “Agree,” “Neither Agree Nor Disagree,” “Disagree,” and “Strongly Disagree.” Statements on the patient survey included items such as, “It is important
for my health care provider to know how I am feeling; It is important for my health care provider to ask about depression; I felt comfortable completing the screening tool; I think I may have depression or symptoms of depression; I completed this screening tool in less than 5 minutes.”

Statements on the parent questionnaire included the following items: “It is important for my health care provider to know how my teen is feeling; It is important for my health care provider to screen my teen for depression; I think my teen may be having symptoms of depression; My teen completed the screening tool in less than 5 minutes.”

The items in these questionnaires were obtained after a thorough literature search examining similar screening questions and methods. Secondly, an expert panel was formed to design, review and rate each question in order to determine content validity (Lynn, 1986). Each expert panel member rated each item separately based upon four criteria: bias, relevance, clarity, and whether or not each question was leading the respondent. The content validity was calculated at 100% for each survey question item with the exception of Question 1 which was calculated at 93.75% regarding the statement “It is important for my health care provider to know how my teen is feeling” on the parent questionnaire or “It is important for my health care provider to know how I am feeling” on the patient questionnaire. The overall content validity for the each questionnaire was calculated at 98.2%.

**Retrospective Chart Review**

A chart review tool (Appendix J) directed the data gathering from all patient charts with birthdays between January 1, 1993, through January 1, 1999, reflecting patients that are within the age group of 12 to 18 years. Demographic data collected included the age and date of birth for the patient, gender, and ethnicity. The electronic database was searched for the ICD9 code
beginning with 311 to search for depression codes six months prior to the start of the study. The code for dysthymia (300.4) has not been utilized in our clinic and was not included in the search.

**Data Management and Cleaning**

During the data collection, each subject was assigned a subject identification number. This number was used on the demographic form, the parent and patient questionnaire, and the CES-DC (Radloff, 1991) screening tool. All information was kept in a locked safe in a locked cabinet at the Pediatric Center of Las Colinas during the data collection process. After data collection and analysis was completed, all research data was moved to a locked filing cabinet at The University of Arlington (UTA) in the researcher’s office.

Data was cleaned by checking all areas of the raw data including the demographic form, both questionnaires, and the CES-DC for missing data and accuracy in data recording from the original forms to the spreadsheet. Computer programs were used to help clean the data further by scanning for numbers that may be too great or too small for the variable. Computer print outs were also be checked for accuracy. All computer information is password protected and all saved hard copies are stored in a locked filing cabinet at the researcher’s office at UTA.

**Data Analysis**

**Description of data analysis procedures**

The demographic data was completed prior to screening the adolescent using the CES-DC (Radloff, 1991) screening tool. This data was analyzed for each subject enrolled into the study. Further analysis included examining the data according to demographics and the total CES-DC scores. Total CES-DC scores were separated into two groups labeled either positive or negative. The positive group scored greater than or equal to the recommended cut off score of
15. The negative group scored less than 15 on the CES-DC. This information is displayed in Table 1. This table includes frequencies, percentages, means, and standard deviations for the variables as appropriate.

Nonparametric statistics were reported due to the suspected distribution and the small sample size of this pilot study. According to Pallant (2010), the descriptive statistics provide information about the distribution of a sample. The distribution is then described according to its skewness and kurtosis. Skewness is the measure of symmetry in the sample and kurtosis describes the sample in terms of flatness or peakedness (Pallant, 2011). With normal distribution, the skewness and kurtosis should be equal to zero. When examining the CES-DC (Radloff, 1991) total scores with males, the skewness equaled 2.56 (SE=.481) and females equaled 1.58 (SE=.448). The kurtosis of the CES-DC with males equaled 8.04 (SE=.935) and females equaled 3.08 (SE=.872). Therefore, the conclusion was drawn to examine the data using nonparametric statistics.

The Mann Whitney U was used to examine the differences in groups. The Spearman’s Rho, a correlational statistic, was used to determine the strength of the relationships between groups. Descriptive statistics were utilized to analyze the frequencies, means, and standard deviations of the research questions. Comparison of the younger and older adolescents and comparisons between age, gender, and ethnicity in relation to total CES-DC (Radloff, 1991) scores was examined using the Spearman Rho. Questionnaires were analyzed at interval data also using nonparametric statistics.
Results

The sample included a total of 100 participants or 50 dyads consisting of one parent and one teen. All dyads completed the study paperwork in its entirety except one parent questionnaire and one teen questionnaire was left blank. As noted in Table 1, the adolescent participants in this study included 23 males (46%) and 27 females (54%) with a mean age of 14.99 (SD=1.81). The ethnic groups represented included 16 Caucasians (32%), 20 Hispanics (40%), 13 African Americans (26%), and 1 Asian (2%) of which all were patients of the Pediatric Center of Las Colinas. The majority of adolescents screened had been patients of this clinic for more than five years (86%). Only four patients (8%) had a previous diagnosis of depression from an outside clinic, five patients (10%) had taken a medication for a mental health illness which included attention deficit disorder, and seven patients (14%) reported having received some form of counseling. The majority of these patients reported a family income between $50,000 and $100,000 annually (see Table 1 for the presentation of demographic data).
Table 1

Demographic Data of Entire Sample, Negative Scores on the CES-DC and Positive Scores on the CES-DC

<table>
<thead>
<tr>
<th></th>
<th>Entire Sample N=50</th>
<th>Negative Scores on CES-DC N=40</th>
<th>Positive Scores on CES-DC N=10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23</td>
<td>46</td>
<td>21</td>
</tr>
<tr>
<td>Female</td>
<td>27</td>
<td>54</td>
<td>19</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>16</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>Hispanic</td>
<td>20</td>
<td>40</td>
<td>18</td>
</tr>
<tr>
<td>African Am.</td>
<td>13</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>Asian</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Family Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 24,999</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>25,000 to 49,999</td>
<td>6</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>50,000 to 99,999</td>
<td>24</td>
<td>48</td>
<td>18</td>
</tr>
<tr>
<td>&gt; 100,000</td>
<td>19</td>
<td>38</td>
<td>16</td>
</tr>
</tbody>
</table>

In regards to research question one, in the six months prior to data collection, the electronic medical record database at the Pediatric Center of Las Colinas was searched for the diagnosis of depression in patients 12 to 18 years of age scheduled in the clinic for well care. Approximately 784 patients met the criteria and six patients (chart review group) had the diagnosis of depression (ICD9 code 311.0). The mean age of the chart review group (N=6) was 15.3 years and consisted of two males and 4 females, three Caucasian teens and three Hispanic teens. Less than 1% of this group was identified as having depressive symptoms using the HEADDSS assessment (Stephens, 2006) during the well child visit. After implementation of the pilot study and screening for depressive symptoms with the CES-DC (Radloff, 1991) screening tool, 10 of 50 patients (20%) were identified as having a positive score for depressive symptoms.
This percentage is significantly higher than the national prevalence data indicating 5-6% of adolescents suffer from depression (Williams, et al., 2009).

For research question number two, no significant relationship was found in the total CES-DC (Radloff, 1991) scores and the adolescent’s age. No statistical relationship was found in younger versus older adolescents even when grouped by 2 or 3 different age groupings. The mean score on the CES-DC (N=50) was 10.22 (SD=9.36). Ten adolescents scored greater than or equal to 15 on the CES-DC (M=25.3, SD= 9.64), and these ten had a mean age of 14.85 (SD=.75). Seven of these ten adolescents had ages clustered around the age of 14 years (14 years 1 month to 14 years 10 months). A greater proportion of the teens in the positive score group were female and African American (N=10, 7:10 female, 6:10 African American). For CES-DC total scores of the entire sample, the positive group and the negative group, refer to Table 2.

**Table 2**

*Comparison of CES-DC Total Scores in the Entire Sample, the Negative Group, and the Positive Group*

<table>
<thead>
<tr>
<th></th>
<th>Entire Sample (N=50)</th>
<th>Negative Scores on CES-DC (N=40)</th>
<th>Positive Scores on CES-DC (N=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>14.99</td>
<td>15.02</td>
<td>14.85</td>
</tr>
<tr>
<td>Mean CES-DC Scores</td>
<td>10.22</td>
<td>6.45</td>
<td>25.3</td>
</tr>
</tbody>
</table>

Negative Score = Total CES-DC score less than 15
Positive Score = Total CES-DC score greater than 15

To answer research question three, nonparametric statistics were explored to see if there was a relationship or a difference in the total CES-DC (Radloff, 1991) scores and the adolescent’s age. In this small sample, there did not appear to be a relationship between the total...
CES-DC score and the adolescent’s age using the Spearman Rho \((N=50, r=.099, p=.494, \text{not } \text{sig})\); however, females appear to have more depressive symptoms than males. The Mann Whitney U confirmed the significance of the relationship in the gender and the total scores \((Z= -2.85, p=.004)\) by comparing the median scores between the two groups. The Spearman Rho indicated the strength of the relationship in the total CES-DC scores and gender \((N=50, r=.4, p<.003)\). The distribution of total scores were also examined across ethnic groups and shared a trend toward a level of significance \((p=.055)\). No significant statistical relationship was found in the total CES-DC and family income, whether there was a family history of a mental health disorder, whether or not the teen was previously diagnosed as depression or had received counseling or had previously taken medications for a mental health disorder.

The prevalence data in this pilot study was compared to national prevalence data for depressive symptoms detected through screening to answer research question four. With 10 out of 50 adolescents having positive CES-DC (Radloff, 1991) total scores, the prevalence of depressive symptoms in this study population was found to exceed national prevalence data, 20% versus 5-6% respectively (Williams et al., 2009).

To answer research question five, the number of referrals to a mental health provider were tracked. All ten patients with positive CES-DC scores were referred for a mental health interview. Eight patients were determined to have depression and two patients were determined to have medical causes for their fatigue.
Table 3

Parent and Teen Responses to Follow-up Questionnaires Comparing Negative Screening Group and Positive Screening Group

<table>
<thead>
<tr>
<th>Parent Statement</th>
<th>Neg Group %</th>
<th>Pos Group %</th>
<th>Sig. Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=39</td>
<td>N=10</td>
<td></td>
</tr>
<tr>
<td>It is important for my HCP to know how my teen is feeling.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>95</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is important for my HCP to screen my teen for depression.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>80</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think my teen may be having symptoms of depression.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>77.5</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>My teen completed the screening tool in less than 5 minutes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>72.5</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Teen Statement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=40</td>
<td>N=9</td>
<td></td>
</tr>
<tr>
<td>It is important for my HCP to know how I am feeling.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>82.5</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>15</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>2.5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>It is important for my HCP to screen for depression.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>77.5</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>2.5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>I felt comfortable completing the screening tool for depression.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>75.5</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>7.5</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>I think I may have depression or some symptoms of depression.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>90</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>7.5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>2.5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>I completed the screening tool in less than 5 minutes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree/Agree</td>
<td>67.5</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>17</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree/Disagree</td>
<td>14.5</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

HCP = Health Care Provider

P values indicate a correlation is significant at the .01 or .05 level (2-tailed)
Research question six sought to examine the parent’s and adolescent’s perceptions of the screening process. In this sample, the majority of parents and teens felt it was important for the healthcare provider to screen for depressive symptoms, and it was important for the healthcare provider to know how the teen was feeling. Each statement was then examined in relation to the total CES-DC (Radloff, 1991) score using the Spearman Rho. Table 3 provides a side by side comparison of the parent and teen questionnaire results. The significant results from the questionnaires were in relation to the teen’s responses. Teens felt it was important for the healthcare provider to screen for depressive symptoms \((r=.327, p<.02)\), and teens felt it was important for the healthcare provider to know how they were feeling \((r=.542, p<.00)\). Teen’s who believed they may have depressive symptoms had their feelings validated with a positive score on the CES-DC \((r=-.583, p<.00)\). Even when parents recognized the importance of screening (80%), they were incorrect in judging whether their teen was having depressive symptoms and less than 10% of parents thought their teen had depressive symptoms (see Table 3 for the presentation of collected responses to these questions).

Furthermore, the principal researcher wanted to examine the burden of time placed on the practice when implementing a screening tool such as the CES-DC (Radloff, 1991). The final question in each parent and teen questionnaire asked them to evaluate the time it took to complete the screening tool only. Approximately 72.5-90% of the parents thought it took less than 5 minutes or their teen to complete the tool. Roughly 60-67.5% of adolescents felt they completed the tool in less than 5 minutes and some reported it took them longer.

Several trends identified in the data worth discussing include the possible relationship in the total CES-DC (Radloff, 1991) scores and ethnicity. Seven of the 10 adolescents who scored greater than 15 on the CES-DC were African American. Although the gender showed a
relationship with females having more depressive symptoms than males, a larger sample is needed to explore the relationship in ethnicity. It is interesting to note eight of the 10 adolescents scoring positively were female. Another noticeable trend was the clustering of the ages around the age of 14 years.

**Discussion**

The findings in this pilot study suggested adding a brief screening tool to screen for depressive symptoms in a busy primary care practice not only provides valuable information about the teen's mental health, but teens also thought screening was an important part of their health care. One hundred subjects were enrolled (50 parent and teen dyads), and all subjects completed the study. The findings from the pilot study were compared to a chart review conducted six months prior to the implementation of the screening process. Six patients out of 784 in the chart review group had a diagnosis of depression. This represented less than one percent of patients were identified using the HEADDSS assessment (Stephens, 2006) during the well child visit which was the current standard of care. Once screening was implemented with the CES-DC (Radloff, 1991), 10 out of 50 adolescents scored higher than 15 on the CES-DC which represents 20% of the adolescents were identified as having depressive symptoms with use of a screening tool. Other studies have shown a similar prevalence rate (24 to 26.2%) when a screening tool is implemented (Chisolm et al., 2009; Lazaratou et al., 2010).

Although no relationship was found in the total CES-DC (Radloff, 1991) score and age and no relationship was found even when the ages were grouped differently, there was a significant difference in the total scores and gender. Females were found to suffer with more depressive symptoms than males. This finding is consistent with other research studies (Hallfors et al., 2005; Lazaratou et al., 2010; Rutman et al., 2008; Winter et al., 1999; Williams et al.,
Total CES-DC scores were also compared across different ethnic groups using the Spearman Rho and shared a trend toward significance even with this small sample size (N=50, p=.055).

Use of the parent and teen questionnaires revealed several important findings. The majority of parents and teens felt screening was an important part of their health care and the majority of parents and teens thought the provider should inquire about the teen’s mental health. These findings were significant. In addition, when teens suspected they had depressive symptoms, their feelings were validated with a score greater than 15 on the CES-DC. Furthermore, even parents who thought screening was important were not aware their teen had depressive symptoms and less than 10 percent of parent’s thought their teens had any of these symptoms.

Anecdotal Findings

Anecdotal findings included identification of some possible trends. Of the ten who scored positively, seven of the adolescents were in the range of 14 years and 1 month to 14 years and 10 months. Further studies may need to examine this age and determine if teens are at a greater risk of depressive symptoms in the first year of high school or examine what other factors may be playing a role in this age group. According to national depression data from the National Alliance on Mental Illness (NAMI), the majority of mental illness begins by 14 years (Gruttadaro, 2011). In this small pilot study sample, a clustering of ages around 14 years was evident; future research studies with larger samples may be able to identify whether or not this is a true trend. Future research may also help to identify reliable screening methods for younger
children. Does mental illness or depression begin at age 14 years or is it the lack of reliable screening methods for children in the younger age group, 7 to 11 years of age?

Also in this sample, the adolescents scoring positively on the CES-DC (Radloff, 1991) were mostly female and mostly African American. National data supports the female gender has more depression than males (Hallfors et al., 2005; Lazaratou et al., 2010; Rutman et al., 2008; Winter et al., 1999; Williams et al., 2009); however, only one study examined the prevalence of depression across ethnic groups. Lazaratou et al., (2010) found more depression in the African American population. Future research studies with larger samples are needed to test the significance of this trend.

In this pilot study, the researcher was also interested in examining the burden of implementing a screening tool into practice and found no real burden at all. Most patients completed the screening tool in less than 5 minutes, and an experienced provider can score the screening tool in about one minute. The screening tool can be completed in the waiting room or in the patient room while waiting on the provider. Furthermore, most parents and teens were willing to participate in the screening, and the refusal rate was low. The CES-DC (Radloff, 1991) is a free screening tool, readily available, and requires no additional training for its use. The PCLC has decided to continue to use this screening tool and has discussed implementing other more comprehensive screening tools for mental health.

Implementation of a brief screening tool such as the CES-DC has proven to be beneficial to the adolescent, their parent, and the relationship with the health care provider. Discussing the screening tool findings with the parents and their teen seemed to provide an entry point for a conversation of the teen's true feelings. Exploring feelings further and discussing reasons for
their positive answers seemed to open lines of communication between the adolescent and the parents. In this discussion, the health care provider became a liaison for the teen promoting healthier communication between the parents and the adolescent. Some adolescents seemed relieved to be able to openly discuss some of the challenges they were facing, and parents seemed somewhat surprised by their adolescent’s responses. This discussion of feelings and emotions seemed to open lines of communication between the provider and adolescent and the adolescent and their family, lines of communication that were previously damaged or nonexistent. Chisolm et al., (2009) found similar findings and felt lines of communication improved between the patient and healthcare provider.

**Limitations**

The limitations of this study include the small sample size, its limited generalizability, and use of a convenience sample. This sample represented a small portion of a private pediatrician’s practice in an urban area within the Dallas/Fort Worth Metroplex. The majority of these subjects had private insurance and represented a higher socioeconomic class. A larger more diverse sample is needed to examine the potential trends identified in this study and to determine whether African Americans or African American females are at a greater risk of having depressive symptoms. A larger more diverse sample is also needed to examine the clustering of ages around 14 years and to further determine the significance of this finding. The findings in this study are also limited to adolescents in the 12 to 18 year age group.

**Conclusions**

Early identification and treatment of adolescent depression in children and adolescents is a national health priority. It is imperative for healthcare providers to learn to recognize the
subtle signs of this silent epidemic since the majority of teens present first to their primary care provider (Melnyk, 2006; Gruttadaro; 2011). Providers must be aware of the common symptoms of depression and how symptoms vary in different age groups. Healthcare providers must realize many parents will dismiss these symptoms as a normal part of puberty. It is imperative for primary care providers to be aware of the current recommendations for screening as outlined in the USPSTF Recommendations 2009 which recommended routine screening for depression in 12 to 18 year old adolescents in the primary care setting when appropriate mental health services including confirmation of diagnosis, psychotherapy, and follow up are available.

More research concerning screening for mental health issues is needed in children and adolescents in the primary care setting. Studies examining the feasibility of screening, identifying efficient procedures for completing the screening and referral processes, and further testing of tools used for screening for depression and other mental health concerns would be beneficial. With the current national focus on mental health issues in children and adolescents and the recommendations set forth by the USPSTF, it is time for healthcare providers practicing evidenced based practice to translate this research into practice.

Implications for Practice for the DNP Role

Translating evidence-based research into practice is the cornerstone of the Doctor of Nursing Practice (DNP) role. A DNP prepared researcher as the principal investigator in a clinical study provides a new level of understanding and bridges the gap between the researcher and the practicing clinician. DNPs are valuable clinicians with the ability to bring evidence-based practice into reality and promote quality outcomes for patient care. This pilot study is a prime example of translating research into practice, and a great example of how a DNP can bring
about change in the health care system. In this study, the researcher/DNP student completed a systematic review of the available evidence before writing a research proposal to test, implement, and evaluate the process of implementing the CES-DC (Radloff, 1991) screening tool into practice.

The DNP is a new educational role which prepares nurse leaders in the clinical setting who are able to critically analyze the literature, lead and influence the process of change, pilot the change in practice, and evaluate the process for continued implementation. The DNP education includes expansion of the current clinical knowledge base and focuses on areas of leadership, interdisciplinary collaboration, project management, process change, and development of health policy initiatives. The DNP is in the perfect position to move health policy initiatives forward to support screening for mental health issues in primary care and lead the change to early identification and treatment. According to Wall, Novak, and Wilkerson (2005), the DNP is perfectly suited to “reengineer” the health care system.
References


Appendix A

Pathways to Care for Depression Through Primary Care Model (Asnarow et al., 2002)

Youth attends primary care visit

Detection: Youth with depression identified through primary care setting

Motivation: Youth and family are motivated and receptive to care.

Education and Treatment Planning

- Watchful Waiting
- Speciality Referral
- Treatment in Primary Care
- Care Management
Appendix B

Framework Algorithm for Screening for Adolescent Depression in a Primary Care Setting

1. Adolescent presents to Primary Care Office for Well or Sick Visit
2. Routine Screening for Depression Offered
3. Accepted/Screening Completed
   - Screening Positive/Concerning for Depression: Schedule Mental Health Evaluation
   - Screening Negative No Concerns/Screen at Future Visit: Referral to Psych Mental Health Specialists
4. Declined/Screening Offered at Future Visit
5. Decision to Treat in Primary Care or Refer to Appropriate Mental Health Provider for Comorbid Diagnoses or Multiple Medication Management
Appendix C

Parent’s Consent to Participate

Study Title: Screening for Adolescent Depression Using the CES-DC Screening Tool in a Primary Care Practice

Principle Investigator: Sharolyn Dihigo, MSN, RN, CPNP-PC

Ms. Dihigo is a Pediatric Nurse Practitioner, a Doctoral Student, and a Child and Adolescent Mental Health Specialist, exploring the effectiveness of implementing a screening tool for depression in teens ages 12 to 18 years in a primary care setting. This study may or may not have any direct benefits to you or your adolescent. Through participation, you or your teen may feel the need to discuss feelings or emotions that are uncomfortable or cause anxiety or other emotions. If your teen is experiencing signs of depression, early identification of depression or depressive symptoms can lead to earlier treatment options. Recognizing and treating adolescent depression may decrease the likelihood of adult depression. Use of the depression screening tool may help you talk more openly with your health care provider or your teen about these feelings. For some teenagers, the screening process may suddenly make them more aware of an underlying event that led to their depression such as being physically or sexually abused. In rare cases, severe depression or suicidal thoughts may be discovered. The information obtained during this study will allow health care professionals to learn more about the use of screening tools for depression in primary care offices and help to identify and treat depression at earlier stages.

This research study and its procedures have been reviewed and approved by the appropriate review boards at The University of Arlington and the Pediatric Center of Las Colinas (PCLC). Your health care provider at PCLC is aware of this study and has agreed to allow the staff a PCLC to speak with you and your teen about becoming a participant. The goal of this
study is to enroll approximately 100 participants. At any point during the study, you and your teen may withdraw or seek the advice of your health care provider at PCLC.

The study procedures involve few foreseeable risks or harms to you or your adolescent. The procedures include: (1) having the parent complete a demographics sheet, (2) having the teen complete the CES-DC screening tool, and (3) having both parent and adolescent complete a brief questionnaire about the screening process. It should take about 10 to 20 minutes to complete the paperwork for the study.

Participation in this study is completely voluntary. You and your adolescent are under no obligation to participate. You and your adolescent have the right to withdraw at any time without affecting the care or your relationship with the health care providers at the PCLC.

It will be necessary to use your adolescent’s name on the coding information form in order to assign a study participant number. Your adolescent’s name may also be used in case of emergency if there is a need to notify you immediately. Otherwise, all paperwork will be identified by a number only. Your information will be kept confidential and in a secure and locked designated location. All paperwork will be treated the same as any medical record or health care information in accordance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996. Screening tools will be scored and tallied by the principle investigator, and only Ms. Dihigo will know the results of your depression screening. Your screening tool may or may not be scored on the same day you are in the clinic for the visit. You may choose to be notified of your adolescent’s results and whether or not it is recommended that your adolescent have further evaluation.
Confidentiality Statement from the IRB at UTA

If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, then The University of at Arlington will protect the confidentiality of those records to the extent permitted by law. Your research records will not be released without your consent unless required by law or a court order. The data resulting from your participation may be made available to other researchers in the future for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate you with it, or with your participation in any study.

Contact for Questions

Questions about this research or your rights as a research subject may be directed to Sharolyn Dihigo at (214)-478-8123. You may contact the chairperson of the UT Arlington Institutional Review Board at (817)-272-3723 in the event of a research-related injury to the subject.

Consent Signatures

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

__________________________________________________________
Signature and printed name of principal investigator or person obtaining consent  Date

By signing below, you confirm that you have read or had this document read to you.

You have been informed about this study’s purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time.

You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may discontinue participation at any time without penalty or loss of benefits, to which you are otherwise entitled.

________________________________________
SIGNATURE OF PARENT VOLUNTEER  DATE
Parent Section – Please Initial (If you chose not to be notified, please leave blank.)

☐ Yes, I would like to be notified if my teen scores greater than 15 on the depression screening tool. I realize this will cause a breech in the confidentiality of my teen.

☐ Yes, I would like a copy of the screening tool to be a part of my child’s electronic medical record as well as any discussions, treatment, or referrals that may be needed.
Study Title: Screening for Adolescent Depression Using the CES-DC Screening Tool in a Primary Care Practice

Principle Investigator: Sharolyn Dihigo, MSN, RN, CPNP-PC

Ms. Dihigo is a Pediatric Nurse Practitioner, a Doctoral Student, and a Child and Adolescent Mental Health Specialist, exploring the effectiveness of implementing a screening tool for depression in teens ages 12 to 18 years in a primary care setting. This study may or may not have any direct benefits to you. Through participation, you may feel the need to discuss feelings or emotions that are uncomfortable or cause anxiety or other emotions. If you are experiencing signs of depression, early identification of depression or depressive symptoms can lead to earlier treatment options. Recognizing and treating depression in the teen years may decrease the likelihood of having depression as an adult. Use of the depression screening tool may help you talk more openly with your health care provider or your parents about your feelings. For some teenagers, the screening process may suddenly make them more aware of an underlying event that led to their depression such as being physically or sexually abused. In rare cases, severe depression or suicidal thoughts may be discovered. The information obtained during this study will allow health care professionals to learn more about the use of screening tools for depression in primary care offices and help to identify and treat depression at earlier stages.

This research study and its procedures have been reviewed and approved by the appropriate review boards at The University of Arlington and the Pediatric Center of Las Colinas (PCLC). Your health care provider at PCLC is aware of this study and has agreed to allow the staff a PCLC to speak with you and your parent about becoming participants. The goal
of this study is to enroll approximately 100 participants. At any point during the study, you and your parent may withdraw or seek the advice of your health care provider at PCLC.

The study procedures involve few foreseeable risks or harms to you. The procedures include: (1) having the parent complete a demographics sheet, (2) having the teen complete the CES-DC screening tool, and (3) having both parent and adolescent complete a brief questionnaire about the screening process. It should take about 10 to 20 minutes to complete the paperwork for the study.

Participation in this study is completely voluntary. You are under no obligation to participate. You or your parent has the right to withdraw at any time without affecting the care or your relationship with the health care providers at the PCLC.

It will be necessary to use your name on the coding information form in order to assign a study participant number. Your name may also be used in case of emergency if there is a need to notify your parent's immediately. Otherwise, all paperwork will be identified by a number only. Your information will be kept confidential and in a secure and locked designated location. All paperwork will be treated the same as any medical record or health care information in accordance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996. Screening tools will be scored and tallied by the principle investigator, and only Ms. Dihigo will know the results of your depression screening. Your screening tool may or may not be scored on the same day you are in the clinic for the visit. Your parent may choose to be notified of your results and whether or not it is recommended that you have further evaluation if your score is positive for depressive symptoms.
Confidentiality Statement from the IRB at UTA

If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, then The University of at Arlington will protect the confidentiality of those records to the extent permitted by law. Your research records will not be released without your consent unless required by law or a court order. The data resulting from your participation may be made available to other researchers in the future for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate you with it, or with your participation in any study.

Contact for Questions

Questions about this research or your rights as a research subject may be directed to Sharolyn Dihigo at (214)-478-8123. You may contact the chairperson of the UT Arlington Institutional Review Board at (817)-272-3723 in the event of a research-related injury to the subject.

If the subject is a minor: ASSENT

By signing below, you confirm that you have read or had this document read to you.

You have been informed about this study’s purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You understand that since you are under 18 years of age that your parent(s)/legal guardian(s) have consented for your participation.

You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may discontinue participation at any time without penalty or loss of benefits, to which you are otherwise entitled.

______________________________
SIGNATURE OF PARENT / LEGAL GUARDIAN DATE

______________________________
SIGNATURE OF MINOR VOLUNTEER DATE
Appendix C (cont)

Teen Consent 18 years of Age ONLY

Birthdate: __________________

I, ________________________, am 18 years of age and able to consent for myself. I will be notified if I score positively for depressive symptoms. My parents may also be notified if I score positively for depression and the researcher has concerns for my well being.

_________________________  __________________________  __________________________
Patient  Date  Cell Phone/Phone Number

_________________________  __________________________
Parent’s Name  Phone Number for Parent
Appendix D

Demographic Data Sheet

Subject ID # ______________________ DOB: ______________________

A. What is your adolescent’s gender? (Please circle one.)
   1. Male 2. Female

B. What is your adolescent’s ethnic background?
   1. ( ) Caucasian
   2. ( ) Hispanic/Latino
   3. ( ) African American
   4. ( ) Asian
   5. ( ) Other

C. Please select a category that would best represent your current family income.
   1. ( ) Less than 24,999
   2. ( ) 25,000 to 49,999
   3. ( ) 50,000 to 99,999
   4. ( ) 100,000 or more

D. Does your adolescent have a previous diagnosis of depression?
   1. ( ) Yes
   2. ( ) No

E. Does anyone in the family have a diagnosis of depression?
   1. ( ) Yes
   2. ( ) No

F. Does anyone in the family have any other mental health disorder?
   1. ( ) Yes  Name of disorder _____________________________
   2. ( ) No
Appendix D (cont)

G. How long has your adolescent been a patient at the Pediatric Center of Las Colinas?
   1. ( ) Less than 1 year
   2. ( ) 2 to 5 years
   3. ( ) 5 years or more

H. Has your adolescent ever seen a health care provider for a mental health concern?
   1. ( ) Yes
   2. ( ) No

I. Has your adolescent ever taken medications for a mental health disorder?
   1. ( ) Yes
   2. ( ) No

J. Has your adolescent had any counseling for a mental health concern?
   1. ( ) Yes
   2. ( ) No
Appendix E

CES-DC Screening Tool Scoring Directions

The Center for Epidemiological Studies Depression Scale for Children (CES-DC) is a 20-item self-report depression inventory with possible scores ranging from 0 to 60. Each response to an item is scored as follows:

0 = “Not At All”
1 = “A Little”
2 = “Some”
3 = “A Lot”

However, items 4, 8, 12, and 16 are phrased positively, and thus are scored in the opposite order:

3 = “Not At All”
2 = “A Little”
1 = “Some”
0 = “A Lot”

Higher CES-DC scores indicate increasing levels of depression. Weissman et al. (1980), the developers of the CES-DC, have used the cutoff score of 15 as being suggestive of depressive symptoms in children and adolescents. That is, scores over 15 can be indicative of significant levels of depressive symptoms.

Remember that screening for depression can be complex and is only an initial step. Further evaluation is required for children and adolescents identified through a screening process. Further evaluation is also warranted for children or adolescents who exhibit depressive symptoms but who do not screen positive.

See also

Tool for Families: Symptoms of Depression in Adolescents, p. 126.
Tool for Families: Common Signs of Depression in Children and Adolescents, p. 147.

REFERENCES


www.brightfutures.org
Appendix E (cont)

CES-DC Screening Tool

---

**Center for Epidemiological Studies Depression Scale for Children (CES-DC)**

**INSTRUCTIONS**

Below is a list of the ways you might have felt or acted. Please check how much you have felt this way during the past week.

**DURING THE PAST WEEK**

<table>
<thead>
<tr>
<th>Number</th>
<th>Score</th>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Not At All</th>
<th>A Little</th>
<th>Some</th>
<th>A Lot</th>
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</thead>
<tbody>
<tr>
<td>1. I was bothered by things that usually don’t bother me.</td>
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<tr>
<td>2. I did not feel like eating; I wasn’t very hungry.</td>
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<td>3. I wasn’t able to feel happy, even when my family or friends tried to help me feel better.</td>
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<td>4. I felt like I was just as good as other kids.</td>
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<td>5. I felt like I couldn’t pay attention to what I was doing.</td>
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<td>6. I felt down and unhappy.</td>
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<td>7. I felt like I was too tired to do things.</td>
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<td>8. I felt like something good was going to happen.</td>
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<td>9. I felt like things I did before didn’t work out right.</td>
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<td>10. I felt scared.</td>
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<td>11. I didn’t sleep as well as I usually sleep.</td>
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<tr>
<td>12. I was happy.</td>
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<tr>
<td>13. I was more quiet than usual.</td>
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<tr>
<td>14. I felt lonely, like I didn’t have any friends.</td>
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<tr>
<td>15. I felt like kids I know were not friendly or that they didn’t want to be with me.</td>
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<tr>
<td>16. I had a good time.</td>
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<td>17. I felt like crying.</td>
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<tr>
<td>18. I felt sad.</td>
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<td>19. I felt people didn’t like me.</td>
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<tr>
<td>20. It was hard to get started doing things.</td>
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www.brightfutures.org
### Parent Questionnaire

Please answer each question to the best of your ability and as accurately as possible using the following scale.

Subject ID # __________

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Uncertain (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>It is important for my health care provider to know how my teen is feeling.</td>
<td></td>
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<tr>
<td>2.</td>
<td>It is important for my health care provider to screen my teen for depression.</td>
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<td>3.</td>
<td>I think my teen may be having symptoms of depression.</td>
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<td>4.</td>
<td>My teen completed the <strong>screening tool</strong> in less than 5 minutes.</td>
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</table>

Comments:
Appendix G
Patient Questionnaire

Please answer each question to the best of your ability and as accurately as possible using the following scale.

Subject ID #

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>It is important for my health care provider to know how I am feeling.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>6.</td>
<td>It is important for my health care provider to ask about depression.</td>
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<td>7.</td>
<td>I felt comfortable completing the screening tool for depression.</td>
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<td>8.</td>
<td>I think I may have depression or some symptoms of depression.</td>
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<tr>
<td>9.</td>
<td>I completed the <strong>screening tool</strong> in less than 5 minutes.</td>
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Comments:
Appendix H

Clinical Log of Patients Asked to Participate

Tally Sheet

<table>
<thead>
<tr>
<th>Number of Patients Accepted Screening</th>
<th>Number of Patients Denied Screening</th>
<th>Reason for Denial</th>
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<tbody>
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</table>
Appendix I

Clinical Log of Patients Referred for Higher Level Mental Health Care

Tally Sheet

<table>
<thead>
<tr>
<th>Subject ID</th>
<th>Total Score on CES-DC</th>
<th>Referral To…</th>
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</table>
Appendix J
Chart Review Tool

Chart # __________________________ Subject # __________________________

Calculated age __________________________

Gender

1. ( ) Male
2. ( ) Female

Ethnicity

1. ( ) Caucasian
2. ( ) Hispanic/Latino
3. ( ) African American
4. ( ) Asian
5. ( ) Other

Diagnosis Code for Depression

1. ( ) Yes
2. ( ) No
Appendix K

Project Budget

<table>
<thead>
<tr>
<th>Clinical Project Budget</th>
<th>Unit</th>
<th>Cost</th>
<th>Projected Total</th>
<th>Actual Total</th>
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<tbody>
<tr>
<td>Paper</td>
<td>2</td>
<td>$3.99</td>
<td>$7.98</td>
<td>$19.95</td>
</tr>
<tr>
<td>Photocopies</td>
<td>500</td>
<td>$0.08</td>
<td>$40.00</td>
<td>$64.00</td>
</tr>
<tr>
<td>Pens</td>
<td>2</td>
<td>$14.99</td>
<td>$29.98</td>
<td>$29.98</td>
</tr>
<tr>
<td>Small Fire Safe</td>
<td>1</td>
<td>$34.99</td>
<td>$34.99</td>
<td>$34.99</td>
</tr>
<tr>
<td>Clipboards</td>
<td>2</td>
<td>$1.69</td>
<td>$3.38</td>
<td>$3.38</td>
</tr>
<tr>
<td>Lunch for Staff Training</td>
<td>10</td>
<td>$10.00</td>
<td>$100.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Mid Study Rewards - gift certificate</td>
<td>1</td>
<td>$50.00</td>
<td>$50.00</td>
<td>$50.00</td>
</tr>
<tr>
<td>NIH Training Rewards - Gift Certificates</td>
<td>3</td>
<td>$15.00</td>
<td>$45.00</td>
<td>$15.00</td>
</tr>
<tr>
<td>Rewards Luncheon upon Completion of Project</td>
<td>10</td>
<td>$15.00</td>
<td>$150.00</td>
<td>$165.00</td>
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</tbody>
</table>

Final Total

- $471.32
- $392.29
Appendix L
Implementation of the CES-DC in Clinical Practice

Front Desk Receptionist/Medical Assistant/MA Supervisor

- Greet patient for Well Child Care
- Explain pilot study to parent and teen; Offer participation

Agree to Participate
- Give parent consent form; Witness teen's assent
  - Give Parent Packet
  - Give Teen Packet
- Collect packets; check for missing data
- Have parent or teen complete missing data
- Store information in designated, secure, locked areas

Decline Participation
- Document reason for refusal
  - Keep tally of total participants

Principal Investigator
- Train key employees
- Oversee project implementation

- Provide positive feedback
  - Problem solve issues
  - Reward Staff

- Document # of patients diagnosed with depression in previous 6 months
  - Score CES-DC
  - Notify parent if score >15 and parent elected to be notified on consent form
  - Track # of patients referred to mental health care provider

Check completeness of data
- Code data for data entry
- Conduct Data Analysis
- Interpret findings
- Write for Publication; Create Poster
- Disseminate Findings
- Decide whether or not to implement CES-DC in clinical practice as a new standard

Principal Investigator
- Train key employees
- Oversee project implementation

- Provide positive feedback
  - Problem solve issues
  - Reward Staff

- Document # of patients diagnosed with depression in previous 6 months
  - Score CES-DC
  - Notify parent if score >15 and parent elected to be notified on consent form
  - Track # of patients referred to mental health care provider

Check completeness of data
- Code data for data entry
- Conduct Data Analysis
- Interpret findings
- Write for Publication; Create Poster
- Disseminate Findings
- Decide whether or not to implement CES-DC in clinical practice as a new standard
## Appendix M
### Time Line

<table>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Systematic Review</td>
<td>Planning Stages of Clinical Project</td>
<td>Finalizing project details</td>
<td>IRB Proposal Finalized</td>
<td>Preparing for project implementation</td>
<td>Formal Training of Key Employees</td>
<td>First day of data collection; pilot study begins</td>
<td>Data Collection Continues</td>
<td>Coding and data analysis</td>
<td>Final Paper Completed</td>
</tr>
<tr>
<td>IRB Clearance from Clinical Advisor</td>
<td>Copying documents &amp; begin gathering supplies</td>
<td>Lunch for all employees</td>
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<tr>
<td>Meet with Robin Dickey, IRB Coordinator</td>
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<tr>
<td>IRB Proposal Submitted and Pending Approval</td>
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</table>

- First day Data Coding and Final Paper of data Collection data analysis Completed; Continues pilot study begins
- Provide positive reinforcement and Reward staff; gift cards
- Interpretation of Findings
- Poster Presentation
- Congratulatory lunch at the end of project
Appendix N

Referral Sources for Child Psychiatrist, Play Therapist, & Counselors

Child and Adolescent Psychiatrist

Association of Family Psychiatry, PA
Child, Adolescents, & Adult Psychiatry
Dr. Tarakumar Reddy
669 Airport Fwy, Suite 301
Hurst, Texas 76053
817-825-8900

Dr. Samir Wahby
Child, Adolescent, & Adult Psychiatry and Neurology
905-A Medical Center Drive
Arlington, Texas 76012
817-461-3823

Southlake Psychiatric & Counseling Center – cash only
Dr. William T. Goldman
Practice limited to Clinical Psychopharmacology
Child, Adolescent, and Adult
2485 E. Southlake Blvd, Suite 220
Southlake, Texas 76092
817-329-3300
Appendix N (cont.)

Psychiatry for 16 years and older

The Couch – Psychiatry Associates
Dr. Sangeeta Awasthi & Patsy Swatek, LCSW
3901 W. Green Oaks Blvd, Suite B
Arlington, Texas 76016
817-496-7700

Tri City Psychiatric Services
Dr. Wasiq A. Zaidi
General Psychiatry and Addiction
3600 South Cooper St., Suite 100
Arlington, Texas 76015
817-200-6680

The Hopper Group Behavioral Health Specialists
Dr. Ken Hopper
801 Road to Six Flags, Suite 145
Arlington, Texas 76012
817-274-8800
www.thehoppergroup.com
research@thehoppergroup.com
Appendix N (cont.)

Counseling Referrals

**Kids/Adolescents – Play Therapy**

**Lighthouse Counseling**

Brenda Hendrix-Smith – 4 yr to adult; loves college kids  
550 Silicon Dr., #100  
Southlake, Texas  
817-416-7729

**Metroplex Counseling**

Allison Threlkeld and others in this practice  
209 N. Industrial Blvd, #237  
Bedford/Euless Area (Industrial and 183)  
817-571-4110

Carol Harvick  
1414 W. Randoll Mill Rd, #200  
Arlington, Texas  
817-275-4742
Appendix N (cont.)
Counseling Referrals, continued

Southlake Counseling
Heather R. Robinson
401 N. Carroll St., #140
Southlake, Texas
817-421-5555

Center for Counseling and Enrichment – several in the practice; love them all
301 S. Center St., #214
Arlington, Texas
817-276-6412
Appendix O

Letter of Approval from PCLC

Pediatric Center of Las Colinas, PA

Sue C. Schleier, M.D., F.A.A.P.
Wincy Peveto Tomecko, M.D., F.A.A.P.
Sharolyn K. Dihigo, R.N., C.P.N.P.

701 Tuscan Drive, Suite 285
Irving, Texas 75039
972-401-0700

October 28, 2010

To Whom It May Concern:

I am a pediatrician affiliated with the Pediatric Center of Las Colinas. We are private practice pediatrics office in Irving, Texas. We see patients in our office ranging from birth through teenage years.

Dr. Tomecko and I have agreed to allow Sharolyn Dihigo to use our office to conduct research for her clinical research project on adolescent depression.

If you need additional information, please let me know.

Yours truly,

Sue Schleier, M.D.
Appendix P

January 3, 2011

Sharolyn Kay Dihigo
Dr. Ronda Mintz-Binder
The University of Texas at Arlington
College of Nursing
Box 19407

EXPEDITED APPROVAL OF HUMAN SUBJECT RESEARCH

IRB No.: 2011-0076
TITLE: Screening for Depression Using the CES-DC in a Primary Care Setting
Effective Date: December 16, 2010
Expiration Date: December 15, 2011

Approved Number of Participants: 100 (Do not exceed without prior IRB approval).

The University of Texas Arlington Institutional Review Board (UTA IRB) has made the determination that this research protocol involving human subjects is eligible for expedited review in accordance with Title 45 CFR 46.110(a)-(b)(1), 63 FR 60364 and 63 FR 60353, category (5)(7). The IRB Chairman (or designee) approved this protocol effective December 16, 2010. IRB approval for the research shall continue until December 15, 2011.

APPROVED NUMBER OF PARTICIPANTS:
This protocol has been approved for enrollment of a maximum of 100 participants and is not to exceed this number. If additional data are needed, the researcher must submit a modification request to increase the number of approved participants before the additional data are collected. Exceeding the number of approved participants is considered an issue of non-compliance and will result in the destruction of the data collected beyond the approval number and will be subject to deliberation set forth by the IRB.

INFORMED CONSENT DOCUMENT:
The IRB approved and stamped informed consent document (ICD) showing the approval and expiration date must be used when prospectively enrolling volunteer participants into the study. The use of a copy of any consent form on which the IRB-stamped approval and expiration dates are not visible, or are replaced by typescript or handwriting, is prohibited. The signed consent forms must be securely maintained on the UT Arlington campus for the duration of the study plus a minimum of three years after the completion of all study procedures (including data analysis). The complete study record is subject to inspection and/or audit during this time period by entities including but not limited to the UT Arlington IRB, Regulatory Services staff, OHRP, and by study sponsors (if the study is funded).

MODIFICATION TO AN APPROVED PROTOCOL:
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 prior IRB review and approval except when necessary to eliminate apparent immediate hazards to the subject." Modifications include but are not limited to: Changes in protocol personnel, number of approved participants, and/or updates to the protocol procedures or instruments and must be submitted via the electronic submission.
system. Failure to obtain approval for modifications is considered an issue of non-compliance and will be subject to review and deliberation by the IRB which could result in the suspension/termination of the protocol.

ANNUAL CONTINUING REVIEW:
In order for the research to continue beyond the first year, a Continuing Review must be completed via the online submission system within 30 days preceding the date of expiration indicated above. A reminder notice will be forwarded to the attention of the Principal Investigator (PI) 30 days prior to the expiration date. Continuing review of the protocol serves as a progress report and provides the researcher with an opportunity to make updates to the originally approved protocol. Failure to obtain approval for a continuing review will result in automatic expiration of the protocol all activities involving human subjects must cease immediately. The research will not be allowed to commence by any protocol personnel until a new protocol has been submitted, reviewed, and approved by the IRB. Per federal regulations and UTA’s Federalwide Assurance (FWA), there are no exceptions and no extensions of approval granted by the IRB. The continuation of study procedures after the expiration of a protocol is considered to be an issue of non-compliance and a violation of federal regulations. Such violations could result in termination of external and University funding and/or disciplinary action.

ADVERSE EVENTS:
Please be advised that as the principal investigator, you are required to report local adverse (unanticipated) events to The UT Arlington Office of Research Administration; Regulatory Services within 24 hours of the occurrence or upon acknowledgement of the occurrence.

HUMAN SUBJECTS TRAINING:
All investigators and key personnel identified in the protocol must have documented Human Subjects Protection (HSP) training or CITI Training on file with The UT Arlington Office of Research Administration; Regulatory Services. Completion certificates are valid for 2 years from completion date.

COLLABORATION:
If applicable, approval by the appropriate authority at a collaborating facility is required prior to subject enrollment. If the collaborating facility is engaged in the research, an OHRP approved Federalwide Assurance (FWA) may be required for the facility (prior to their participation in research-related activities). To determine whether the collaborating facility is engaged in research, go to: http://www.hhs.gov/ohrp/humansubjects/assurance/engage.htm

CONTACT FOR QUESTIONS:
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 by calling 817-272-9329.

Sincerely,

Patricia Turpin

Patricia Turpin, Ph.D., RN, NEA, BC
Clinical Associate Professor
UT Arlington IRB Chair