Meeting Teens Where They Are: The Feasibility of a Cognitive Behavioral Intervention for Depressed Adolescents in Pediatric Primary Care

Jaclynn Lea Lubbers

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MEETING TEENS WHERE THEY ARE: THE FEASIBILITY OF A COGNITIVE BEHAVIORAL INTERVENTION FOR DEPRESSED ADOLESCENTS IN PEDIATRIC PRIMARY CARE

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A Dissertation Submitted to the Graduate Faculty of GRAND VALLEY STATE UNIVERSITY

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Abstract

Depression among adolescents is underidentified and undertreated due to challenges within mental health systems and primary care settings, resulting in poor outcomes. This project expanded the role of the pediatric nurse practitioner in primary care by redesigning the way depression in adolescents was detected and treated. An evidence-based, 7-session with homework, manualized cognitive behavioral intervention, named “Creating Opportunities for Personal Empowerment” (COPE) curriculum, was implemented in a primary care practice in a Midwestern city. Beck’s Cognitive Model and the Chronic Care Model were used to guide this intervention. A convenience sample of 10 adolescents, 9 female and 1 male, between the ages of 14-18 was used. Attrition and recruitment were difficult as two participants completed the intervention, five attended a portion of the sessions, and three participants did not attend any sessions following the consent process. Outcome measures included improvement in depression related outcomes as measured by the PHQ-9 and the Youth Self Report, adolescent satisfaction with care received as measured by the Youth Client Satisfaction Questionnaire, and a qualitative measure of pediatric primary care provider satisfaction. The participants who either attended a portion of the sessions or did not attend any sessions scored higher on pre-intervention depression measures than those who completed the intervention. Particularly, the participants who attended only a portion of the sessions reported difficulty in the area of sleep. This project confirms difficulties delivering appropriate care to depressed adolescents. Doctor of Nursing Practice roles in the areas of expert clinician, advocate, leadership, scholarship, and education can inform future interventions for this vulnerable population.
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Chapter 1

INTRODUCTION

It is all too common to pick up a newspaper, to turn on the television, or to listen to the radio and read or hear about the impact of untreated mental illness on adolescents. Reports of suicides, bullying, shootings, substance abuse, and teenage pregnancy have become daily news. This news is so prevalent that Merikangas, He, Brody, et al. (2010) report, “there have been more references to child mental health in the news in the past 2 years than in the entire preceding decade” (p. 76). Pediatric primary care providers have seen an emerging trend. They have seen mental health problems or psychosocial morbidities surpass physical health problems in youth (Melnyk, Brown, Jones, Kreipe, & Novak, 2003). Among adolescents, the prevalence of emotional and behavioral disorders is greater than the most frequent physical health conditions such as asthma and diabetes.

The Definition and Prevalence of Adolescent Depression

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV TR; American Psychiatric Association [APA], 2000) defines the criteria for depression and other psychiatric diagnoses. The symptoms of a major depressive episode are: (a) depressed mood, (b) markedly diminished interest or pleasure in activities most of the day, (c) significant weight loss, (d) insomnia or hypersomnia, (e) psychomotor agitation or retardation, (f) fatigue or loss of energy, (g) feeling of worthlessness or excessive or inappropriate guilt, (h) diminished ability to think or concentrate or indecisiveness, and (i) recurrent thoughts of death, suicidal plan or suicidal attempt. To meet the criteria for diagnosis, five or more of the previously listed symptoms must be
present during the same 2-week period and representing a change from previous functioning. At least one of the five symptoms must be either depressed mood or loss of interest or pleasure.

The prevalence of depression, according to the National Center for Health Statistics (NCHS), is 5.4% of all Americans and 4.3% of Americans between the ages of 12 and 17 (U.S. Department of Health and Human Services [USDHHS], 2008).

According to a prevalence survey published by Merikangas, He, Brody, et al. (2010) approximately one in every four or five youth in the U.S. meet criteria for a mental disorder with severe impairment across his or her lifetime. Of those teens, approximately 40% meet criteria for more than one disorder. To further illustrate the magnitude of the problem, Lynch and Clarke (2006) estimate that 20% of American youth may experience a depressive episode before age 18.

Depressive disorders do not affect all adolescents equally. Many authors support the finding that females are more than twice as likely as males to experience depression. Overall, rates of any mood disorder are higher among older adolescents. Non-Hispanic Black persons and Mexican American youth are more likely to experience depression than non-Hispanic white youth. Low socioeconomic status increases the likelihood for depression as more than one out of seven poor Americans has depression (USDHHS, 2008). Merikangas, He, Brody, et al. (2010) reported that poor children had higher rates of any mental health disorder, with the exception of anxiety, than their wealthier peers.

Depression is an expensive diagnosis in terms of direct and indirect costs. The prevalence survey by Merikangas, He, Burstein, et al. (2010) estimates the annual economic burden of mental health disorders on the well-being of American youth and
their families approaches a quarter of a trillion dollars. According to Horowitz and Garner (2006) untreated depression can result in negative outcomes such as substance abuse, academic problems, cigarette smoking, high-risk sexual behavior, physical health problems, impaired social relationships, and a 30-fold risk of completed suicide, which is the third leading cause of death in this age group. Indirectly, depression also places a burden on relationships within families and strains resources in schools and homes.

Teen depression is associated with future costs as well. This was demonstrated in a longitudinal study by Keenan-Miller, Hammen, and Breenan (2007) who found that, “young adults who had experienced depression in early adolescence reported more visits to medical professionals and greater impairment in work functioning due to their physical health” (p. 260). Therefore, improving treatment of depression among adolescents should positively affect their future physical and mental health.

**Delivering Care to Depressed Adolescents**

Evidence-based treatments in the form of pharmacologic therapies and counseling interventions exist for the treatment of depression in adolescents. Shatkin (2009) reviewed medications such as Selective Serotonin Reuptake Inhibitors (SSRIs), for example Prozac (fluoxetine), and therapies such as cognitive behavioral therapy (CBT) for the treatment of adolescent depression. Shatkin concluded it is difficult to conclude a single best approach to treating adolescent depression. As a general treatment guideline, Shatkin discussed beginning treatment in the least restrictive setting taking into consideration the duration and intensity of the patient’s symptoms. Studies known as the Treatment for Adolescent Depression Study (TADS; March et al. 2004) and the Treatment of Resistant Depression in Adolescents (TORDIA; Brent et al. 2008) study
have investigated the role of combined psychotherapy and psychopharmacology in the treatment of adolescent depression and are discussed in more detail in the next chapter. Groups such as the American Academy of Pediatrics (AAP) have taken the evidence and formulated evidence-based treatment algorithms known as the Guidelines for Adolescent Depression in Primary Care (Cheung et al., 2006).

Despite the enormous scope of the problem and the presence of evidenced-based pharmacologic and counseling interventions, it is estimated that only between 21% and 35% of children and adolescents who need mental health services receive them (Kataoka, Zhang, & Well, 2002). Other authors, such as USDHHS (2008) estimate only 29% of those with moderate or severe symptoms of depression report contact with a mental health professional. Moreoptimistically, Merikangas, He, Brody, et al. (2010) report 43% of those surveyed with depression or dysthymia reported health service contacts for their conditions. Many factors have contributed to these statistics.

**Mental Health Care Treatment of Depression**

**Mental Health Workforce Challenges**

According to the Institute of Medicine (IOM, 2006) the mental health workforce suffers from both a shortage and unequal distribution of clinically trained and active mental health providers. The IOM (2004) is also concerned with a lack of racial and ethnic diversity across all health professions as there is a disparity between the U.S. census and the racial and ethnic composition of the health care workforce. The IOM reports these differences translate into poor access of health services by racial and ethnic minorities, insensitivity to cultural and ethnic differences when diagnosing and treating
physical and mental health conditions, and cultural and linguistic barriers within health care systems.

Psychiatric-mental health (PMH) nurses are no exception to these statements. According to Hanrahan (2009) the average age of experienced PMH nurses in the United States is 50 with only 4% younger than 30. These nurses are also more likely to live and work in New England region, the West North Central region, or the Middle Atlantic. States such as Texas and Nevada have the lowest number of psychiatric nurses per 100,000 in the population. Also according to Hanrahan, 79.4% of the PMH nurse workforce is White non-Hispanic.

Advanced practice registered nurses-psychiatric mental health (APRN-PMH) nurses demonstrate similar characteristics to PMH nurses. Hanrahan, Delaney, and Stuart (2012) estimate there are approximately 15,973 APRN-PMHs in the United States. Of that number the mean age is also 50 years, 91% are female, and 83% work in urban settings.

Nationwide there is a shortage of psychiatrists, particularly in the child and adolescent specialty (Thomas & Holzer, 2006). The psychiatrist workforce mirrors the psychiatric nursing workforce as 55% of the practicing psychiatric workforce is 55 or older and only 4% of medical school seniors applied for psychiatric residencies (Insel, 2011). This shortage is expected to increase as the demand for child and adolescent psychiatric services is expected to double between 1995 and 2020. In addition to a shortage of psychiatrists, the distribution of psychiatrists is inequitable, “so that children living in poverty or rural areas are less likely to have access to child and adolescent
psychiatrists” (Thomas & Holzer, 2006, p.1). Hanrahan (2009) estimates 75.7% of psychiatrists are White, non-Hispanic.

Last, Hanrahan et al. (2012) writes these problems extend to psychologists and social workers as well. The percentage of these professionals who are age 50 or older is 66% and 58% respectively with smaller numbers of professionals entering the workforce than leaving it. As with all behavioral health professionals, a great percentage of the workforce is older than age 50. According to Hanrahan et al. (2012) many behavioral health professionals work with an outdated model of care. Advances in many areas of the sciences as well as in concepts such as integrated care and recovery models of care challenge providers to embrace a new body of knowledge.

**Stigma**

There is stigma associated with seeking mental health care. This is documented in a study by Chandra and Minkovitz (2006) who report, “Negative attitudes toward mental health services and boys’ greater level of perceived stigma toward mental health services is present as early as middle school” (p. 754.e7). Jaycox et al. (2006) surveyed 444 adolescents who screened positive for depression and found that 48% considered depression to be more stigmatizing than being in a wheelchair, having asthma, or having HIV/AIDS. Stigma leads us to believe that depressed adolescents are more likely to be violent and less likely to be popular than their non-depressed peers (Wisdom, Clarke, & Greene, 2006). This stigma, according to Wisdom, Clarke, and Green can also predict adverse mental health outcomes.
Fragmented Delivery

The delivery of care within the mental health system is fragmented. Often, a pediatric primary care provider recognizes there is a mental health problem requiring some form of treatment. The primary care provider may then involve a psychiatrist and/or a psychologist. When psychiatrists are involved in treatment, their role most often is to manage psychotropic medications, not counsel. When psychologists or social workers are involved in treatment their role is to provide psychological counseling, not medications. Frequently there is no communication back to the primary care provider regarding diagnosis, chosen therapy and progression in therapy by any of these professionals. This lack of communication is cited by studies of pediatric primary care providers as a problem with the mental health system. Wisdom et al. (2006) write that individuals with depression may be unable to attend to the multiple tasks of managing a chronic disease such as depression when managed by multiple health providers. Asarnow, Jaycox, and Anderson (2002) reported that in contrast to adults, youth may receive mental health care in more than one arena (e.g., primary care, specialty care, and/or school) and the lack of communication between all providers creates a barrier to excellent care.

Pediatric Primary Care Treatment of Adolescent Depression

Given the difficulties receiving care in the mental health system, attention has turned toward pediatric primary caregivers to provide mental health care to adolescents. Melnyk (2010) estimates approximately 75% of children with mental health disorders are seen in primary care settings. The National Association for Pediatric Nurse Practitioners (NAPNAP, 2007) calls for improved screening and education regarding mental health
problems in primary care. NAPNAP advocates for the primary care delivery of evidence-based interventions for common mental and behavioral health problems. The USDHHS (2010) Healthy People 2020 goals recognize this need by calling for an increase in the proportion of primary care facilities that provide mental health treatment onsite or by paid referral. The American Academy of Pediatrics (AAP) Task Force on Mental Health (Foy, 2010) also published practice guidelines in 2010 to assist pediatric primary care providers to provide mental health care in primary care.

The advantages of using pediatric primary care for the treatment of depression are the presence of longitudinal care across the lifespan and the development of relationships both with patients and families. This makes primary care an ideal location for the delivery of mental health services. Much attention in primary care has been focused on the development of the patient and family centered medical home model for care to improve access to and outcomes of care delivered. In 2002, the AAP called for the, “provision of care coordination service in which the family, the physician, and other service providers work to implement a specific care plan as an organized team” (Trivedi, Pattison, & Baptista Neto, 2010, p. 185). While this model seems ideal to improve mental health outcomes, difficulties encountered in primary care make this difficult.

First, there is a broad definition of the role of the pediatric primary care provider in providing mental health services. Richardson, Lewis, Casey-Goldstein, McCauley, and Katon (2007) conducted a qualitative study of pediatric primary care providers and their treatment of adolescent depression in the northwestern United States. The authors concluded the role of the pediatric primary care professional in the treatment of adolescent depression was dependent upon the motivation of the provider and access to
other mental health resources. Those with high motivation and more access to other mental health resources considered their role to be the “first step in treatment” and most often prescribed antidepressants, occasionally offered informal counseling, and referred to mental health professionals when necessary. Those with low motivation and more access to other mental health resources considered themselves “coordinators of care” and would prescribe medications in a time-limited fashion and direct patients toward counseling or community resources. Regardless of motivation among providers those with limited access to mental health resources considered themselves “de facto mental health providers” (p. 435). Many providers did not embrace this role but had no referral resources. In this group, the providers were more comfortable providing medication management than counseling. In addition, there is disagreement among pediatric primary caregivers as to their role in the care of children with mental illness. In a study of pediatricians by Stein, Horwitz, and Storfer-Isser (2008) only one third of those surveyed, (with the exception of Attention-Deficit Hyperactivity Disorder [ADHD]), agreed it is their responsibility to treat and manage mental health diagnoses. Compounding this problem is a lack of psychiatric training of pediatricians in their residency programs.

Second, adolescents must present for a pediatric primary care visit. Asarnow et al. (2002) report that about 70% of 10 to 18 year olds have contact with a primary care provider for well-child visits, school or sports-mandated physical examinations, or acute care. For all adolescents, the number of visits to a pediatric primary care provider decreases between the ages of 13 and 18 perhaps due to a shift to providers who provide emergency medicine or family planning services. Adolescents, who are uninsured, underinsured, or otherwise disadvantaged may never reach a primary care provider.
Adolescents in general are more likely to underutilize primary care services in favor of urgent care or emergency care centers. This underutilization of primary care is most notable among minority adolescents and those receiving governmental assistance for healthcare coverage (Asarnow et al., 2002).

Third, when there is contact with a pediatric primary care provider, there is a lack of appropriate screening and identification. The survey by Ozer et al. (2009) found that among 1,000 adolescents who had received a well-child examination in the year prior to being surveyed about one third reported being screened for emotional distress during their visit. Females were more likely to be surveyed than males although it is unclear from the data if the patient or the clinician initiated the conversation. Asarnow et al. (2002) wrote that primary care physicians recognized the presence or possible presence of psychiatric disorders in only 12% of youth. Time constraints, difficulties in reimbursement for screening or counseling services, lack of referral sources for teens with a positive depression screen, and varying degrees of competency with administering and interpreting standardized depression screens likely contribute to this finding. Asarnow et al. (2002) reported the best predictor of whether a provider detected symptoms of any behavior disorder is continuity of care. Youth typically present to the primary care office with physical complaints such as fatigue, abdominal pain, or headaches and with psychiatric complaints such as anxiety or depression only 2% of the time, which makes detection difficult without universal screening. Lack of screening contributes to the low number of patients with depression receiving appropriate care.

Fourth, there are factors among families and patients that may cause missed opportunities. Trivedi et al. (2010) wrote that 55% of parents who had a mental health
concern about their child chose not to share it with their pediatric primary care provider. They hypothesize this may be due to stigma present in the primary care office as well as the mental health arena. A parent’s own mental illness affects the ability to access mental health care and identify symptoms in children. Also, parents and teens must be receptive to services. What makes detecting and providing mental health services in primary care especially complicated is the fact that parents and families, at least initially, did not seek mental health care or a mental health diagnosis on their initial visits to pediatric primary care. Parents may also be unaware of their teen’s level of distress.

**Financial and Administrative Barriers to Care**

Whether mental health care is delivered to adolescents in primary care or a mental health setting, financial and administrative barriers are present. In either setting, only diagnoses with specific codes can be billed. Problems that are emerging or not yet a diagnosis, cannot be billed. Once a diagnosis is made, a lack of parity in mental and physical diagnostic code reimbursement is problematic despite the Mental Health Parity and Addictions Act of 2008. This act does not apply to recipients of Medicaid or Medicare, employees of small companies, or those who purchase their own insurance. Payment is only made for a face-to-face encounter with patients; they are not made for consultation appointments with parents only, consultations with other mental health providers, scoring of standardized assessment tools, or phone consultations with parents or patients. Insurance companies limit reimbursement of mental health diagnostic codes to primary care providers. Insurance companies also do not recognize mental health professionals, such as social workers or psychologists, providing services in a primary
Translational Research Question

The scope of the problem of pediatric depression is enormous and the difficulties delivering care within the existing pediatric primary care settings and mental health settings abound. Given the challenge, the unique preparation of pediatric nurse practitioners (PNPs) educated at the doctoral level allows them to stand in a unique position to deliver care. As PNPs receive training in physical, psychological and psychopharmacologic aspects of care, they are well prepared for this challenge. In an effort to demonstrate this, the following translational research question was posed: Is it feasible for a doctorally prepared PNP to implement a manualized cognitive behavioral intervention within pediatric primary care to improve depression-related outcomes among a real world sample of depressed adolescents and demonstrate patient and provider satisfaction with the care delivered?
Adolescence refers to the period of time between childhood and adulthood. It can be defined in terms of physical, emotional, cognitive, or sexual development. Previously, the term adolescence has been used but not properly defined. Understanding the complexity of the adolescent is integral to guiding interventions for adolescent depression. In this section, several theories used to explain the significance of these changes in the development of and treatment for adolescent depression will be described.

**Conceptual Frameworks**

**Developmental Theories**

**Physical changes during adolescence.** Adolescence is marked by changes in physical appearance and function. For some adolescents, these changes may be welcome and celebrated, for others, they may be the cause of distress. Puberty occurs during this time and refers to the maturation of the reproductive system. For females this is marked by menarche (mean age of 10 years with a range of 8 years to 15 years) and for males this is marked by the production of sperm in the testes (mean age of 12 years with a range of 9 years to 14 years; Burns, Dunn, Brady, & Starr, 2012). In addition, the adolescent experiences rapid linear growth and the development of secondary sex characteristics.

**Neurobiologic changes in the adolescent brain.** Technologies that allow scientists to look at the structures and function of the brain have emerged in the last decade. Studying the differences between the child, adolescent, and adult brain has allowed researchers to hypothesize the role that changes in the brain may play in contributing to the development of depression. Andersen and Teicher (2008) write about
“windows of vulnerability” in the brain to the development of depression (p 183). One of the areas vulnerable in the adolescent involves the pruning of grey matter synapses. Grey matter synapses decrease over time as the brain strives to become more efficient. This pruning leaves the brain vulnerable to underlying genetic predispositions and to the specific area of the brain that is being pruned. This can be the result of new synapses under production or enhanced pruning of certain brain regions. The amount of pruning that takes place is also affected by the presence of estrogen, according to Andersen and Teicher, increasing female vulnerability to depression.

The adolescent brain also seems more vulnerable to the stress-related hormones, gluocorticoids and mineralocorticoids, as the pathways for emotional regulation develop during this time (Andersen & Teicher, 2008). Research by Andersen and Teicher discusses the role of stress, especially at key times during the development of the brain, on the development of areas of the brain that regulate emotion such as the hippocampus, gray matter volume, and prefrontal cortex. Among depressed adolescents, the hippocampus fails to, “. . . provide an appropriate contextual response to affectively laden stimuli” (Andersen & Teicher, 2008, p. 188). The prefrontal cortex (PFC) reaches final adult volume around age 20. This region of the brain is thought to provide regulatory control to the limbic structures of the brain that drive affect. Some hypothesize that a developmental mismatch, which causes the limbic structures or affect development to occur before the cortical structures or emotional control are established, contributes to depression in adolescence (Andersen & Teicher, 2008). This may explain why some pharmacologic treatments fail among adolescents. Last, imaging studies of depressed adolescents demonstrate an amygdala that is over-responsive to fearful stimuli
and not sufficiently regulated by the PFC. Andersen and Teicher suggest this contributes to an excessive and persistent amount of negative affectivity.

In an effort to explain sex differences in the development of depression in adolescent females, Naninck, Lucassen, and Bakker (2011) suggest increased sex steroid levels and cyclic fluctuations in those levels among girls alter neurotransmitter systems, such as the serotonergic system. These changes can potently and lastingly affect mood and behavior. The developing hypothalamic-pituitary-adrenal (HPA) axis is more sensitive to estrogen than testosterone in adolescents making females more sensitive to the effects of stress. Nanick et al. conclude the greater prevalence of depression in adolescent girls is the result of a combination of profound hormonal changes, fluctuations in hormone levels and psychosocial factors.

**Freud’s theory of sexual development.** The development of sexual function leads adolescents to think about themselves and others differently. Sigmund Freud, in his psychoanalytic theory, named early adolescence, from approximately ages 11 to 13, the latency period. During this stage, same sex relationships become very important to control sexual thoughts. A teen in this stage has a very active superego which serves as a strong, moralistic internal representative of parental and societal rules (Thomas, 2005). Freud hypothesizes that failing to complete this difficult, stressful task may result in adults having a difficulty in opposite sex relationships.

The next stage of development during adolescence is what Freud refers to as the mature-genital stage, and occurs from ages 14 to 18. During this stage, adolescents incorporate sexuality into a developing sense of self and resolve questions about sexual values and morals. They also consider and come to terms with the nature of future
intimate relationships. Successfully negotiating this transition results in the ability to gratify sexual urges in a mature fashion, become less egocentric, and more objective with a realistic view of the world (Thomas, 2005).

**Piaget’s cognitive development theory.** While adolescence marks physical and sexual changes, it also marks a monumental change in the way adolescents think about and process information, or cognitive development. Jean Piaget studied the cognitive changes that take place during a lifetime. He labels the final stage of cognitive development formal operations, which is the stage that occurs during adolescence. The stage prior to this is concrete operations in which the child is bound to concrete thoughts and is able to understand what is and unable to understand what might be. Within concrete operational thinking, reality is everything. Formal operations open the door to explore abstract thoughts and reality as a subset of what might be (McAdams, 2009).

According to Thomas (2005), adolescents who are developing more formal operational thinking can think about the future, reason in a more scientific manner, imagine new possibilities, formulate and test hypotheses, think about the consequences of their actions, and engage in scientific reasoning. The development of these cognitive abilities is consistent with adolescent brain development.

David Elkind (1984) discussed two unique features of formal operations. First, he described imaginary audience as the ability to, “think about thinking” (p. 384). Adolescents who believe in the imaginary audience have a heightened sense of self-consciousness and assume their behavior is the focus of everyone else’s concern and attention. This concept has considerable influence over behavior as it helps explain self-consciousness in young teenagers. The second idea is that of personal fable. This is
complimentary to imaginary audience and assumes that each adolescent’s personal experience is totally unique, creating an illusion of immortality and invulnerability. This concept places the adolescent at great risk for impulsive risk-taking and injury.

**Erikson’s theory of psychosocial development.** Last, Erik Erikson’s theory seeks to understand how adolescents undergoing physical, sexual, and cognitive changes fit into the world in which they live. Erik Erikson’s theory of psychosocial development defines adolescence as a time of identity exploration. During this stage the adolescent explores what Erikson calls identity versus role confusion which involves trying to attach meaning to childhood and deciding where he or she fits into the adult world. This is an individual process in dynamic tension within the society in which the individual exists (McAdams, 2009). McAdams (2009) identifies four identity statuses. Some adolescents will reach identity achievement, the optimal of the stages, where a period of exploration is complete and they have a clear sense of ideological goals and positions. Other adolescents will be in moratorium which is a state of exploration but lack of commitment. Those in foreclosure have made identity commitments based on unquestioned positions from their childhood. Last, those in identity diffusion have neither explored identity nor made commitments. Successfully negotiating this stage of development results in the adolescent emerging with unique identity, self-definition, and knowledge he or she is acceptable in society. Failure to achieve this ego-identity results in immaturity, intolerance of those who are different, strong observance of cliques/gangs/clans and peer stereotypes, and blind identification or loyalty to idols, heroes, or charismatic leaders (Thomas, 2005).
Identity exploration can be a difficult process for the adolescent to navigate. During this time Erikson (1968) hypothesizes an adolescent may temporarily overidentify with heroes, cliques, and crowds to the point of almost complete loss of individuality. Adolescent romantic relationships may also be a sign of identity exploration as an adolescent may project his or her diffused self-image on another and see it reflected and clarified.

Kidwell, Dunham, Bacho, Pastorino, and Portes (1995) studied the concept of identity exploration crisis. They studied 82 academically superior high school students and concluded adolescents who were actively involved in the identity exploration process were more likely than their low-exploring peers to display, “inner confusion, agitation, dissatisfaction, unhappiness, periodic episodes of depression, a vacillation between poor self-concept and grandiosity, and disturbed thinking” (Kidwell et al., 1995, p. 5). These findings highlight the difficulty some adolescents have negotiating this stage of development and their vulnerability to subsequent depression. While identity exploration is the developmental task of adolescence, the act of actively exploring this can be related to the onset of depression.

**Cognitive Theory of Depression: Aaron Beck**

The developmental tasks of adolescence and the ability to think in certain ways support cognitive theories of personality development. The cognitive theories look at the unique way individuals process information. These theories view the individual as a rational and planful knower who actively seeks information in the social world and draws upon a rich storehouse of social knowledge in order to regulate his or her own behavior and enact plans and goals in a wide range of social environments (McAdams, 2009).
Central to these theories is the concept of the schema. Simply, a schema is an abstract knowledge structure, or a template used to perceive, organize, and understand information (McAdams, 2009). Individuals employ multiple schemas in their attempt to make sense of the world. Individuals also develop a self-schema, or a structure that assists in the processing of self-relevant information and guiding behavior. Individuals also differ in the kinds of self-schemas they develop in terms of the content and structure of the self-schema.

**Cognitive triad.** This concept of schema is important in Dr. Aaron Beck’s cognitive theory (McAdams, 2009). Beck observed that depressed people hold a negative view of themselves, are pessimistic about the future, and have a tendency to interpret ongoing experiences in a negative manner. Interpreting the self, world, and future in negative terms is known as the cognitive triad (McAdams, 2009). Therefore, depressed people tend to see the world through depressive schemas, which negatively distort reality. This hypothesis is central to the cognitive model, which hypothesizes that people’s emotions and behaviors are influenced by their perception of events (Beck, 1995).

**Beck’s cognitive model.** Within the cognitive theory of depression, Beck uses the term schema and core beliefs interchangeably. These core beliefs or schemas are fundamental to the individual and regarded as absolute truths, even if untrue. Beck (1995) describes core beliefs as global, rigid, and overgeneralized. Negative core beliefs essentially fall into two categories, according to Beck: hopelessness and unlovability. Negative core beliefs are likely to surface during periods of psychological distress and once activated, the individual can more easily process information that supports the negative core belief than information that is contrary to it.
Core beliefs influence the development of a class of beliefs Beck calls intermediate beliefs. These beliefs also arise by people trying to make sense of their environment from their early developmental stages. Intermediate beliefs are attitudes, rules, and assumptions that give way to automatic thoughts which are those cognitions closest to conscious awareness. When presented with a situation, these automatic thoughts then influence emotional, behavioral, and physiologic responses to the situation.

Beck’s Cognitive Model can be illustrated in Figure 1 as follows:

Figure 1: Beck’s Cognitive Model. Adapted from *Cognitive Therapy: Basics and Beyond*, by J.S. Beck, 1995. Copyright: Guilford Press. Reprinted with permission of The Guilford Press. (Appendix A)

**Stress-Diathesis theory.** Beck’s theory is a vulnerability-stress theory, meaning that without the occurrence of stress, individuals who possess depressogenic core-beliefs or schemas are no more likely to develop depression than those who do not. This theory has since been validated by neuroscientists as previously mentioned. Once activated, the
schema influences how an individual perceives, encodes, and retrieves information regarding the negative life event. As mentioned previously, the period of adolescence includes many changes in an individual’s cognitive abilities, physical appearance and function, and social relationships. According to Beck’s theory these changes may be the stressful events contributing to the development of depressogenic self-schema in adolescent depression. This is consistent with the previously mentioned work by Kidwell et al. (1995) on identity exploration crisis.

The vulnerability-stress component of Beck’s model has been supported empirically. Abela and Sullivan (2003) tested the vulnerability-stress component of Beck’s theory on 184 twelve year old students in Canada. Consistent with Beck’s theory, they found dysfunctional attitudes, measured by the Children’s Dysfunctional Attitudes Scale (CDAS), interacted with negative events, as measured by the Children’s Hassles Scale (CHAS) to predict increases in depressive symptoms as measured by the Children’s Depression Inventory (CDI). These findings supported their hypothesis. Interestingly, the most significant increases in CDI scores were found among those assessed to have high self-esteem (F (2,89)=14.39, p<.001) and those assessed to have high levels of perceived social support (F (2,75)=14.74, p<.001). This is also consistent with the work of Kidwell et al. (1995) in that the more capacity an adolescent has for identity exploration, the more distress they may encounter. Abela and Sullivan suggest that children with low levels of social support and self-esteem may possess chronic negative perceptions of themselves and others, leaving little room for lability in their scores. Also, as the researchers examined individual CDI symptoms, the interaction of CDAS with CHAS did not produce a statistically significant change in symptoms most commonly
associated with depression such as anhedonia, hopelessness, irritability, loss of appetite, low energy, motivational deficits, sad affect, sleep disturbances, and somatic complaints. The most significant results of the CDAS with CHAS interaction were for the symptoms of worthlessness ($r=.37$, $p<.001$) and loneliness ($r=.47$, $p<.001$). The authors conclude Beck’s theory is more likely to influence adolescents’ perceptions of self and others. Abela and Sullivan (2003) write, “both cognitive and interpersonal developmental processes may set the stage during early adolescence for dysfunctional attitudes to begin to exert their influence on these symptoms of the depressive syndrome” (p. 399).

Lewinsohn, Joiner, and Rohde (2001) also tested the stress-diathesis hypothesis of depression. They used a data set of 1,709 high school students from Oregon who participated in the Oregon Adolescent Depression Project (OADP) in 1993. They also found dysfunctional attitudes as measured by the CDAS to be positively correlated with the Center for Epidemiologic Studies-Depression Scale (CES-D) at .37. They found negative attributional style as measured by the Kastan Attributional Style Questionnaire for Children (CASQ) to be positively correlated with the CES-D score at .34. More importantly this study also confirmed the interaction between dysfunctional attitudes and negative life events in the development of major depressive disorder (MDD). The authors suggest the strength of this effect was similar to other traditionally strong predictors of MDD such as lifetime history of depression and negative life events. The unexpected finding for Lewinsohn et al. (2001) was that the CDAS findings suggested an increased threshold of vulnerability to depression. At high levels of stress, attributional style had little effect on depression onset. At low levels of stress, the probability of
future depression increased as a function of increasingly negative attributional style. The authors write further work is needed to evaluate this finding.

In 2006, Timbremont and Braet examined the relationship between the cognitive triad and the onset of depressive symptoms in children and adolescents. This study looked at a total of 162 participants in the Netherlands and longitudinally assessed the cognitive triad using the CDI. The investigators did not test the stress-diathesis model as there was no assessment of negative life events from the first to second testing time. The authors did, however, support that the negative cognitive triad does predict that a negative view of the future is a risk for depression in adolescents but not children. The authors explain this by the developmental task of formal operations which involves thinking and planning for the future.

Melnyk, Kelly, and Jacobson (2012) conducted a health intervention study among 485 ethnically diverse adolescents at eight high schools in the southwestern United States which also supports the cognitive theory. In this not yet published study, the authors used the Healthy Lifestyle Beliefs Scale, the Perceived Difficulty Scale, Healthy Lifestyle Behaviors Scale, and the Beck Youth Inventory with the five subscales. These scales were administered before and after a healthy lifestyles intervention. The authors found that as the teens’ beliefs/confidence increased, engaging in healthy behaviors increased. As perceived difficulty increased, healthy behaviors decreased. In addition, as depression, anxiety, anger and disruptive behavior increased, healthy lifestyle beliefs and behaviors decreased. Self-concept was positively related to healthy lifestyle beliefs and behaviors. The findings from this study support cognitive theory in that how teens think is directly
related to their emotions and healthy lifestyle behaviors. Further, mental health variables are highly correlated with healthy lifestyle beliefs and behaviors.

**Cognitive behavioral therapy.** The Cognitive Model and the Cognitive triad provide the foundation for Cognitive Behavioral Therapy or CBT. CBT is used for many mental health conditions and is considered the gold standard of therapy for adolescent depression. According to Shatkin (2009) the goal of CBT is to address the patient’s distorted thoughts and make him or her aware of how his or her thoughts may trigger feelings that are inaccurate. CBT uses various modalities such as role-playing and homework and requires the patient to be willing to do homework and be motivated to change his or her thinking. CBT is often time-limited and brief and can by delivered as a manualized intervention. In CBT the role of the therapist is active in modeling new ways of thinking.

Dr. Aaron Beck (Beck, 1995) specifically outlines ten principles that underlie cognitive therapy for all patients. Cognitive therapy: (a) is based on an ever-evolving formulation of the patient and problems in cognitive terms; (b) requires a sound therapeutic alliance; (c) emphasizes collaboration and active participation; (d) is goal oriented and problem focused; (e) initially emphasizes the present; (f) is educative, aims to teach the patient to be his or her own therapist and emphasizes relapse prevention; (g) is time limited; (h) is structured; (i) teaches patients to identify, evaluate, and respond to dysfunctional thoughts and beliefs; and (j) uses a variety of techniques to change thinking, mood, and behavior.
Literature Review

Meta-analyses of Psychosocial Interventions for Adolescent Depression

According to Melnyk and Finehout-Overholt (2005) the highest level of evidence to serve as the basis for evidence-based practice intervention is level I evidence. Examples of this type of evidence are: systematic reviews, meta-analysis, and evidence-based clinical practice guidelines based on systematic reviews of randomized controlled trials (RCTs). A meta-analysis is a statistical method that condenses results from individual studies into one effect size measure of an intervention across multiple studies. Delivering CBT, and other psychotherapies, to depressed adolescents has been the focus of several meta-analyses that look not only at effectiveness but also the specifics of the interventions that contribute to effectiveness.

Lewinsohn and Clarke (1999) conducted a meta-analysis of 12 studies of interventions for depressed adolescents. Eleven of the 12 Randomized Controlled Trials were CBT based. Nine of the 12 studies involved a manualized approach to therapy. Six of the studies were individual interventions and six were group interventions. The effect size of this meta-analysis is 1.27 with confidence intervals not reported. The authors estimated 63% of the patients showed clinically significant improvement at the end of treatment. The CBT delivered in the studies included in this meta-analysis occurred over a relatively short period of time, usually 1 to 2 months, with a finite number of therapy sessions. The authors, then, conclude it is possible to provide effective help to depressed adolescents under somewhat predictable conditions, which is beneficial for all stakeholders such as patients, families, payers, and providers. The manualized delivery of CBT coupled with a finite number of sessions provides support for this project.
Michael and Crowley (2002) conducted a meta-analysis of 24 psychosocial studies and 14 pharmacologic studies of depressed adolescents. Nine of the 24 psychosocial studies included clinically referred patients treated in a clinic setting, which is the focus of this project, rather than recruited research subjects and research-oriented therapy. Of the studies reviewed, 17 were based in cognitive behavioral therapy and had a median of 8 weeks of treatment. Of specific interest to this project is the authors’ focus on outcomes data by age of treatment and gender. For age, they found patients 13 years and older had larger effect sizes (ES) in both controlled studies (ES=0.93) and pre/post test studies (ES=1.35). The authors reported when the percentage of female subjects in controlled studies was 60% or greater, the mean ES was 0.90 as compared to an ES of 0.63 when the percentage of female subjects was below 60%. Last, the authors report the small effect size of 0.19 for pharmacologic treatments. Their study included mainly Tricyclic Antidepressants, not Selective Serotonin Reuptake Inhibitors (SSRIs). Piaget’s theory of cognitive development is supported by these findings as the older the patients, the more likely they were to view the world through formal operations, and the more beneficial CBT was for them.

The largest, and likely most applicable, meta-analysis of psychotherapies for adolescent depression, included 35 randomized controlled studies, and was reported by Weisz, McCarty, and Valeri (2006). This meta-analysis was supported by grants from the National Institute of Mental Health and the MacArthur Foundation. Of these studies the majority were based in CBT. The authors attempted to answer several questions but one is especially applicable to the scope of this project. They questioned whether psychotherapies are effective in “real-word” or clinically representative conditions.
Conditions they defined as clinically representative used non-recruited samples, therapists who were practicing clinicians versus research therapists, and care delivered in practice settings versus research settings.

In agreement with other meta-analyses, Weisz et al. (2006) do conclude that psychotherapy is effective for youth depression. They report an overall effect size of 0.34 (SD=.40, range -.66 to 2.02) which is statistically significant from zero (z=4.57, p<.01). While statistically significant, and in the moderate range for effect sizes, when compared to other meta-analyses, the effect size reported in this analysis is smaller. The authors suggest an explanation for this is the larger number of studies reviewed and differences between effect size calculation methods.

The authors failed to demonstrate statistically significant differences in effect sizes between clinically representative and recruited study participants (Q (1,33)=0.02, p=.89). They also did not find a statistically significant difference between therapists who were primarily research therapists and those who were practicing clinicians (Q (1,25)=1.92, p=.17). Last, the authors did not find statistically significant differences between interventions delivered in a research setting or a clinical practice setting (Q (1,31)=1.26, p=.26). The lack of statistical significance between these groups lends support to this project since this project involves clinically referred youths, treated by a clinical practitioner, and located in a clinical practice setting.

These same authors further analyzed their data in a follow-up meta-analysis. McCarty and Weisz (2007) looked at what components of interventions for adolescent depression had the most empirical support. This work was funded by grants from the National Institute of Mental Health and the National Alliance for Research on
Schizophrenia and Depression. McCarty and Weisz began by choosing treatments with effect sizes of 0.50 or greater and used clinically diagnosed samples for further examination. This included nine of the 35 studies from the original meta-analysis. Of those nine studies, six were primarily cognitive-behavioral in their approach. They concluded effective psychotherapeutic interventions for teens included the following 12 components: (a) achieving measurable goals/competency; (b) psycho-education about depression and its treatment; (c) self-monitoring; (d) relationship skills training to improve interpersonal skills; (e) communication skills; (f) cognitive restructuring; (g) problem solving; (h) behavioral activation; (i) relaxation; (j) emotional regulation; (k) parent psycho-education; and (l) improving the parent child relationship.

McCarty and Weisz also discuss the treatment process itself and emphasize the process is as important as the content of an intervention. They write the therapeutic process and the relationship between the therapist and youth may be as or more important than the type of clinical intervention. They describe the therapeutic process in three parts: the therapeutic alliance (the bond between therapist and child), the cognitive connective (creating a sense of hopefulness about treatment), and behavioral participation (encouraging the use of techniques outside the therapy setting). The therapeutic alliance is a difficult outcome to measure in a meta-analysis, but McCarty and Weisz found evidence in their analysis that hope for change and assigning homework or exercises between sessions was common among the empirically supported treatments. Interestingly their findings reinforce the writing by Beck (1995) on the basics of CBT. Their emphasis on strong therapeutic relationships supports mental health interventions
as treatment for depression, but particularly in primary care where relationships are likely to be long-standing and open to the creation of a therapeutic alliance.

These four meta-analyses represent the work of sixty-nine unduplicated studies of psychosocial interventions for adolescent depression. This is a large number of reviewed studies lending support to psychosocial interventions, particularly CBT, for depressed teens.

**Meta-analysis of Literature Combining CBT and Pharmacotherapy**

Following the release of the TADS study in 2004 the National Institute for Health and Clinical Excellence (NICE) recommended that Selective Serotonin Reuptake Inhibitors (SSRIs) should not be prescribed in adolescents without a concurrent specific psychological treatment. In their practice parameter, the American Academy of Child and Adolescent Psychiatry (AACAP, 2007) also discusses the likely benefit of psychotherapy and pharmacotherapy used together. When a psychotherapy and pharmacotherapy are utilized together in treatment, the AACAP (2007) and the GLAD-PC (2007) practice guidelines both suggest continuing medication for approximately twelve months after a resolution in symptoms. In the TADS study CBT plus fluoxetine treatment was found to be superior to fluoxetine alone. However, since the TADS publication, similar studies of combined treatments have been conducted with differing results.

Dubicka et al. (2010) conducted a meta-analysis of studies in an effort to support or refute the NICE guidelines, especially given the significant cost and resource utilization of the guidelines. The authors questioned whether adding CBT to antidepressant therapy provides additional benefit in the areas of depressive symptoms,
suicidality, impairment, and global improvement. Five studies, including the TADS study, were reviewed with a total of 1206 adolescents participating in the studies. Three of the included studies were conducted in the United States and two were from the United Kingdom. The mean age of the participants was 15.0 years and all five of the studies included more female than male participants. Approximately one-third of the participants received a manualized CBT intervention; three of the studies utilized master’s degree prepared therapists.

The authors concluded there was no statistically significant evidence to support any additional benefit when adding CBT to antidepressant treatment. Self-reported depression outcomes did not show a significant difference between treatment arms at 12-weeks (SMD=0.04, 95% CI -0.09 to 0.17, p=0.56) or at 26-36 weeks (SMD=-0.03, 95% CI -0.29 to 0.24, p=0.84). There was evidence of treatment effect on impairment outcomes using the Children’s Global Assessment Scale (CGAS) in the short term (SMD=-2.32, 95% CI -3.91 to -0.74, p=0.004). However, CGAS scores at follow up demonstrated no difference (WMD=-1.28, 95% CI -3.40 to 0.84, p=0.24). In the area of global improvement the pooled odds ratio for combined treatment initially was 1.35 (95% CI 0.95-1.92, p=0.09) and at follow-up was 0.97 (95% CI 0.49-1.92, p=0.93). Last, there was no statistically significant improvement in measures of suicidality at either the 12 week measurement (SMD=0.00, 95% CI -0.14 to 0.15, p=0.95) or in follow up measurements (SMD=0.05, 95% CI -0.18 to 0.28, p=0.66).

The authors conclude the evidence to support the NICE guidelines is weak. CBT added to psychopharmacology may be the most beneficial in reducing impairment short-term but there is little evidence of long-term benefit. While the number of studies
reviewed was small and the studies were heterogeneous there is a need for further work to examine which aspects of clinical care may be most beneficial to achieving the best depression related outcomes.

**Meta-analysis of Primary Care Depression Treatment**

The only meta-analysis to specifically look at primary care psychological interventions for major depression versus treatment as usual (antidepressant treatment or treatment as usual by the primary care provider) was conducted with an adult sample by Bortolotti, Menchetti, Bellini, Montaguti, and Berardi (2008). This analysis included 12 randomized controlled trials with 1736 participants 82.7% of whom were female with a mean age of 35.5 years. The sample was also primarily Caucasian.

This meta-analysis looked at two sets of comparisons for depression treatment. The first examined psychological intervention versus usual care in short and long term follow-up. The results for both short term follow-up (SMD -0.42, 95% CI -0.59, 0.26) and long term follow-up (SMD -0.30, 95% CI -0.45, -0.13) favor psychological intervention. The authors also examined five studies which looked at psychological intervention versus pharmacological intervention. Four studies looked at short-term outcomes and three studies also looked at long-term outcomes. Neither analysis showed any significant differences in depressive symptomatology for either short-term (SMD 0.03, 95% CI -0.21, 0.26) or long-term (SMD 0.04, 95% CI -0.23, 0.31) periods.

The adult sample in this meta-analysis partially limits the external validity of the results. However, these studies do suggest that even short-term psychological therapies in primary care may have an enduring impact on depressive symptoms.
The COPE Curriculum: An Overview and Review of Research Support

The Creating Opportunities for Personal Empowerment (COPE) curriculum was developed by Dr. Bernadette Melnyk, a pediatric and mental health nurse practitioner. The COPE curriculum (Melnyk, 2007) is a cognitive skills building program for use with depressed teens. COPE can be delivered to teens in individual, brief sessions. Parents are encouraged, but not required, to participate with their teens as they move through the curriculum. The COPE curriculum contains each of the twelve components of effective therapy for depressed adolescents, as documented by McCarty and Weisz (2007). The active components for the COPE curriculum are similar to those of CBT: reducing negative thoughts (cognitive restructuring), increasing pleasurable activities (behavioral activation), and improving assertiveness and problem-solving skills (homework assignments). The COPE curriculum involves two of the three process components described by McCarty and Weisz: cognitive connection and behavioral participation. The third process component, establishing a therapeutic alliance is a potential benefit of primary care delivery. COPE is an evidenced-based intervention and therefore can be used to instill hope that there is help available for depression and a cognitive connection. The use of homework in the COPE curriculum helps extend the session beyond the 30 minute visit and fulfills the behavioral activation component.

Recently, Lusk and Melnyk (2011a) used the seven session COPE intervention with a group of depressed adolescents at a community mental health setting. A convenience sample of 15 adolescents who met the DSM-IV TR (APA, 2000) criteria for depression was included in the study. At the pre-study measurement, this group was found to be highly depressed with ten of the participants scoring greater than 70 on at
least one Beck Youth Inventory subscale. Following the intervention, there was a statistically significant decrease in Beck Youth Inventory depression sub scores from pre-COPE (M=58.33, SD=11.80) to post-COPE (M=46.25, SD=5.47, t(14)=4.75, p<.0005). Moderate effect sizes were reported for decrease in depressive symptoms (.53, p=.000), decrease in destructive behaviors (.42, p=.000), decrease in anger symptoms (.38, p=.006), increase in self concept (.57, .001), increase in beliefs to manage stress (.67, p=.000), and increase in learned CBT skills (.59, p=.001). Decrease in anxiety symptoms was not statistically significant. Following the intervention, a number of respondents gave positive feedback about the impact of the course. This study suggests COPE appears to be a promising manualized brief, CBT-based intervention based on a real-world sample of depressed adolescents.

The COPE curriculum was piloted in 1997 among a sample of mothers who had a child hospitalized in a Pediatric Intensive Care Unit (PICU; Melnyk, Alpert-Gillis, Hensel, Cable-Beiling, & Rubenstein, 1997). Thirty mothers, sixteen in the experimental group and fourteen in the control group, took part in this study. Mothers who received the COPE intervention were able to provide more support to their children during intrusive procedures while in PICU (t(24)=2.12, p<.05) and on the general pediatrics unit (t(20)=2.70, p<.05). Mothers in the experimental group provided more emotional support to their children in PICU (t(19)=2.25, p<.05). Mothers who received the COPE intervention reported less negative mood state (t(11)=1.94, p<.10) and the mothers in the COPE group reported significantly less stress related to their children’s behaviors and emotions than mothers in the control group (t(24)=2.05, p=.05). Following hospitalization the mothers in the COPE group reported statistically significant fewer
Post Traumatic Stress Disorder (PTSD) symptoms and less parental role change than those in the control. Melnyk et al. (1997) concluded this intervention showed promise for increasing coping skills in this pilot study. The curriculum has since been used in other studies with similar populations beyond the scope of this review.

The COPE curriculum has been implemented with overweight adolescents in conjunction with an additional eight sessions involving a weight loss and exercise component. This is also known as the Healthy Lifestyles Thinking, Emotions, Exercise, and Nutrition (TEEN) program (Melnyk et al. 2006). The first study by Melnyk et al. (2006) involved 23 teens, 11 at one urban high school and 12 at another, between the ages of 15 and 18 with a mean body mass index (BMI) of 32. This descriptive correlational study’s goal was to examine the relationships among mental health/cognitive variables and healthy attitudes, choices, and behaviors in overweight teens who were receiving the COPE Healthy Lifestyles TEEN Program. The researchers found depression (-.69, \( p<.01 \)) and anxiety (-.67, \( p<.01 \)) negatively correlated to beliefs about healthy lifestyles. They found self-esteem (.72, \( p<.01 \)), healthy attitudes (.71, \( p<.01 \)), and healthy choices (.52, \( p<.05 \)) positively correlated, meaning teens with higher self esteem had healthier attitudes and made healthier choices. Teens who perceived healthy lifestyles as more difficult had fewer healthy attitudes (-.47, \( p<.05 \)), fewer healthy behaviors (-.58, \( p<.01 \)), and made fewer healthy choices (-.63, \( p<.01 \)). Teens with higher depressive symptoms had higher perceived difficulty scores (.51, \( p<.05 \)). Based on these findings, Melnyk et al. propose that implementing the COPE Health Lifestyles TEEN program may help overweight adolescents understand that how they think is related to how they feel and how they behave. Specifically with weight loss this could include the
recognition of overeating cues related to stress and weekly goal setting with hopeful components for weight loss.

Melnyk et al. (2007) used the same sample as in the 2006 study mentioned previously, but looked at the data to report weight loss. In this second data analysis, they looked at the twelve students at the second high school and divided them into a COPE versus control group. While they had difficulties with teens completing the after-school program, they did find statistically significant weight loss ($F=6.43, p=.03$) and BMI reduction ($F=6.5, p=.03$) among the COPE participants. Melnyk et al. (2007) reported this small study, despite the high attrition, does give preliminary support for efficacy on adolescent weight loss and reduction.

Melnyk et al. (2009) used the COPE Healthy Lifestyles TEEN program with a Hispanic population in the southwest. This was a randomized controlled study to test the preliminary efficacy of the previous studies. The intervention was delivered during the school day to a health class ($n=12$). The control group was also a health class ($n=7$). In addition to measuring depression and anxiety, several anthropometric measures were obtained, such as height, weight, hemoglobin A1C, and lipid profiles. Participants in the COPE intervention group had statistically significant reductions in anxiety ($-.56, p=.03$) and borderline significant reduction in depression ($-.32, p=.11$). Participants in the COPE intervention group improved their High Density Lipoprotein cholesterol ($.81, p=.03$), Healthy Lifestyle Beliefs ($.48, p=.02$), and Nutrition Knowledge ($.36, p=.05$). There were no statistically significant changes in the control group. Melnyk and her colleagues conclude this intervention has promise for two major public health problems in the United States: adolescent depression and adolescent obesity.
Models of Mental Health Care Delivery in Primary Care

As mentioned previously, the discrepancy between those who need mental health services and those who receive them is great. This is especially true of minorities and those who receive public assistance for health care. This is also true despite so many organizations including the American Academy of Pediatrics (AAP), National Association Pediatric Nurse Practitioners (NAPNAP), Healthy People 2020, Institute of Medicine (IOM) calling for increased access and mental health service delivery. The challenge for pediatric primary care providers is to restructure their care delivery to accurately screen teens for depression, as recommended by the United States Preventive Screening Task Force (USPSTF, 2009) guidelines, develop evidence-based treatment strategies for depression once identified, provide an intervention plus follow-up care, and receive reimbursement for services provided.

Chronic Care Model

Given the magnitude of the problem of adolescent depression, the difficulties in care delivery to adolescents, and the availability of therapies such as CBT which help explain depression care, it is useful to look at models shown to improve care for chronic illnesses such as depression. The Chronic Care Model (CCM) is an organizing framework for improving chronic illness care at both the patient and population level (Fiandt, 2007). The CCM is based on the assumption that improvement in care requires an approach that takes into account patient, provider, and system level interventions.

The CCM involves six key concepts (Fiandt, 2007). The first is organizational support. This concept addresses the culture of the patient care practice. It also encompasses the system leadership which ideally sets high expectations for the care
delivered as well as provides resources to support chronic care and practice improvement outcomes. The second is clinical information systems or CIS. CIS should be structured to organize patient, population, and provider data to describe the health of the population and facilitate efficient and effective care. Third, the CCM defines delivery system design. This concept encompasses the composition and function of the practice team, organization of visits, and management of follow-up care. Fourth, decision support includes mechanisms for increasing provider access to evidence-based practice guidelines and specialists for collaboration. Self-management support is the fifth concept which is an empowerment of the patient to manage his or her own healthcare. Last, an effective chronic care delivery system involves community resources. Linkages with community for peer support, care coordination, and community-based interventions are important for chronic care delivery, especially among elders, low-income, and underserved populations.

The CCM is empirically supported. In a review of the model by Coleman, Austin, Brach, and Wagner (2009) the authors concluded that the presence of multiple CCM elements was associated with better quality of care. These same authors conclude that the cost-effectiveness of the CCM is just beginning to emerge and more evidence is needed to understand the costs and benefits to practices, payers, and patients. Watts et al. (2009) write about the unique strengths of Nurse Practitioners (NPs) to provide care to people with chronic health conditions using the CCM. The CCM also compliments some of Beck’s essentials of CBT in that it encourages patients to be active in their own care and self-management and it emphasizes collaboration and active participation between the patient and the caregiver.
Medical Home

The Patient Centered Medical Home (PCMH) model is grounded in and in many ways similar to the CCM which is widely used as a framework to improve the quality of care and outcomes for people with chronic health conditions (Wagner, Austin, & Von Korff, 1996). The PCMH model was first introduced in the 1960s as a way to organize and manage care for children with special health care needs (Trivedi et al., 2010). Since then the concept of the PCMH has been redefined and strengthened by the Institute of Medicine (IOM, 2001) report which outlined concerns about safety, quality, fragmentation and inefficiency in the health care system, lack of evidence-based care, and lack of information technology (IT) use. The IOM called for a health care system that is safe, effective, patient-centered, timely, efficient, and equitable. More recently the National Committee on Quality Assurance (NCQA, 2012) which is an accrediting agency for PCMH, defined the medical home as:

A health care setting that facilitates partnerships between individual patients, and their personal physicians, and when appropriate, the patient’s family. Care is facilitated by registries, information technology, health information exchange and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner (http://www.ncqa.org/Programs/Recognition/PatientCenteredMedicalHomePCMH.aspx).

Accountable Care Organizations

Similarly, an Accountable Care Organization (ACO) is a group of providers who are willing and able to take responsibility for improving the overall health status, care
efficiency, and health care experience for a defined population (DeVore & Champion, 2011). ACOs are an integral part of the Affordable Care Act passed in March of 2010 for Medicare and Medicaid Services. The goal of ACOs is not just to reduce cost but to improve outcomes in part by empowering people to take charge of their own health, engaging in shared decision making among providers, eliminating waste and unnecessary spending, meeting patient preferences for care, increasing preventive care, breaking down payment silos, creating common payment methods and forming a seamless provider network across a continuum. Both the PCMH and the ACO concepts support providing mental health services within the primary care setting.

Models within Primary Care


Primary care staff education. The first model involved provider training by a child psychiatrist in order to increase management by primary care providers. Bower et al. (2001) reviewed eight studies utilizing this method. Only three of these studies used a control group. Of those with control groups, two did not demonstrate any differences between the treatment groups before and after intervention; the other study measured treatment competencies among the providers versus outcomes among patients. They did
report a positive result for changes in counseling knowledge and ability. Both Asarnow et al. (2002) and Bower et al. (2001) conclude there is improvement in provider confidence and knowledge, but no evidence of improvement in children treated by these providers.

**Co-location model.** A second model involves employing a specialty mental health provider within the health care setting, or a “co-location” model. Bower et al. (2001) reviewed a total of ten studies that utilized this method, only three of which were RCTs. This method fails to demonstrate a marked effect on child development or behavior; however, Bower et al. comment on the lack of quality studies to evaluate this. In addition, it is difficult to receive reimbursement with this approach as insurance companies do not recognize mental health professionals, such as social workers or psychologists, providing services in a primary care setting with “incident to” billing practices (American Academy of Child and Adolescent Psychiatry, 2009). In 2006, the North Carolina Chapter of the AAP worked with the state’s Medicaid program to increase access to care by enrolling mental health providers into Medicaid, allowing up to 26 mental health visits a year, six without a diagnosis by either the primary care physician or a mental health provider, and changing the “incident to” rules to permit a primary care provider to bill for the services of employed mental health professionals (Williams, Shore, & Foy, 2006). Williams et al. (2006) reviewed three different arrangements: a community mental health employee stationed within a private pediatric practice, a mental health provider employed by a pediatric practice, and an independent mental health practice within a pediatric practice. Williams et al. (2006) concluded this model of care results in improved outcomes and reduced costs and overall is sustainable.
due to the changes in reimbursement structure. The variability from state to state with respect to Medicaid reimbursement limits the generalizability of this model.

**Consultation-liason strategy.** A third model is a consultation-liason strategy in which the specialty mental health provider supports primary care management rather than assuming responsibility for the patient. Bower et al. (2001) reviewed one study that employed this method. Their outcomes were appropriateness of referrals to mental health professionals, rates of referrals, and level of knowledge and skills by primary care or referring clinicians. The first two objectives were met in this study, but only one-third of physicians reported this strategy increased their knowledge or skills. This model, originally called the Targeted Child Psychiatric Services (TCPS) model (Connor et al. 2006) was recently implemented by the state of Massachusetts to increase access to specialist care (Sarvet et al., 2010). This project was re-named the Massachusetts Child Psychiatry Access Project (MCPAP). Six mental health care teams were formed, involving a psychiatrist, a psychologist, and a case manager to assist primary care providers with diagnostic questions, identifying community resources, and medication questions. MCPAP also initiated ongoing education for primary care providers. Preliminary data support this model as it increases access to mental health services for families by having the primary care provider assume more mental health care for patients with relatively uncomplicated mental health problems. As child psychiatrists are in limited supply (Thomas & Holzer, 2006) this increases their availability to care for the most complex and severe conditions.

**Collaborative care model.** Last, Asarnow et al. (2002) describe the collaborative care model. This model is a team-based disease management program in which non-
physicians play a major role in patient assessment, education, treatment, and monitoring and improved partnerships between primary care and specialty mental health providers. There are many similarities to this model and the Chronic Care Model. The eight components of the collaborative care model are: (a) case finding and outreach to patients; (b) empowerment and support of the patient in using self-management techniques to achieve sustainable, appropriate care, (c) provider education; (d) structural changes in the delivery of care to involve a collaborative team; (e) use of information systems to support proactive follow up and tracking of outcomes; (f) use of non-physician providers who support the initiation of and adherence to evidence based treatments and assist with linkages between primary care and specialty mental health services; (g) access to specialty mental health for complex patients; and (h) effective coordination with community services (Asarnow et al., 2002).

The collaborative care model has been successfully implemented with adults with depression in primary care and has demonstrated success in the Youth Partners in Care (YPIC) study (Asarnow et al. 2005), funded by a grant from the Agency for Health Care Research and Quality and the National Institute of Mental Health. In this study, 418 patients who screened positive for depression, between 13 and 21 years of age, were randomized at six study sites to receive “usual care” for depression or a quality improvement intervention. Of note, the authors do not state which depression screening tool was used. The quality improvement intervention involved a free clinic visit with a care manager who was a master’s or PhD prepared nurse or member of the mental health field. During this visit the patient and family needs were evaluated, the patient and family received education regarding treatment options and treatment preferences were
clarified. From this visit four treatments were utilized: medication, medication plus psychotherapy, psychotherapy, or no treatment. If psychotherapy was prescribed it was a manualized CBT curriculum delivered by the care manager in 50 minute sessions over 14 weeks. The role of the care manager was also to maintain communication with the primary care clinician, assist the clinician in patient management, and patient follow up over the 6-month intervention period. The primary outcome variable was the Center for Epidemiological Studies-Depression Scale (CES-D) total score. At the six-month follow-up, quality improvement patients had significantly (p=.02) lower mean (19.0, SD=11.9) CES-D scores compared with usual care patients (21.4, SD=13.1). These patients also reported greater satisfaction with their mental health care. Of interest to this project, the quality improvement group was given preferences to their treatment received, and the preferred treatment was psychotherapy alone. According to Melnyk and Fineout-Overholt (2005) patient preference also plays a large role in implementing evidence based practice.

Another study known as the Study to Test Effective Approaches to Depression in Youth (STEADY) also used the collaborative care model with success (Clarke et al., 2005). This study was funded by the Agency for Healthcare Research and Quality and the Garfield Memorial Fund. This study randomized 152 patients between the ages of 12 and 18 who were receiving SSRIs from their primary care physicians into two treatment groups. One group was treatment as usual and the other received a collaborative care intervention. The collaborative care intervention involved the blending of primary care and mental health services so that CBT could occur in conjunction with medication management visits and in consultation with the primary care provider. Primary care
providers received feedback following the CBT sessions. The CBT therapists worked collaboratively with the patient and primary care provider to develop, implement, and modify a treatment plan that included cognitive behavioral and pharmacologic components. Last, provider education about depression management was provided (Asarnow et al., 2002). The primary outcome measure was changes in the CES-D score, and secondary outcome measures were the Youth-Self Report (YSR) scale and the Short Form-12 (SF-12) Mental Component Scale. The authors report an improvement in the intervention group that was not statistically significant at the .05 level, but still represents change (p=.07). This change was greatest not during the acute phase of treatment, but at the 6 and 12 month measurements. Two of the secondary measurements, YSR Externalizing scale (p=.07) and SF-12 Mental Component Summary (p=.04) also demonstrated improvement. This study experienced high attrition rates which influenced results. While the collaborative care intervention yielded modest results, it is applicable to this project because of the method of delivering care and the real-world sample.

**Conclusion**

Adolescence is a tumultuous time of physical, neurologic, sexual, cognitive, and social changes. These changes leave the adolescent vulnerable to depression. Theories such as Beck’s Cognitive Theory help explain what contributes to the development of depression and offer guidance with formulating interventions. The evidence supporting cognitive behavioral interventions for depression among adolescents is strong. The evidence for cognitive behavioral interventions as an adjunct therapy with antidepressant medications is also strong. The challenge lies in changing the way care is delivered to adolescents to first screen them for depression and then have an intervention that is
evidence-based, accessible, builds on the primary care relationship, and has a receptive parent and teen patient base. The Chronic Care Model offers a framework for intervention for this complex diagnosis. The COPE curriculum is a manualized CBT intervention that can be delivered by nurse practitioners to depressed adolescents. The comprehensive identification and treatment of adolescent depression within a pediatric primary care setting is an opportunity for an advanced practice nurse to implement an evidence-based intervention for this vulnerable population.
Chapter 3

METHODS

The question for this project was: Is it feasible for a doctorally prepared advanced practice pediatric nurse to implement a manualized cognitive behavioral curriculum within a primary care setting to improve outcomes for depressed adolescents and demonstrate patient and referring provider satisfaction with the care delivered? Based on the previous review of the literature, cognitive behavioral therapy in the form of the manualized Creating Opportunities for Personal Empowerment (COPE) intervention is an evidence-based intervention for this population. The challenge involved testing the external validity of the work by Lusk and Melnyk (2011a) by implementing the COPE intervention among a similar population of depressed adolescents, but in a different geographic location, in a primary care setting versus community based mental health setting and by a PNP versus a APRN-PMH.

Active implementation is essential to transforming practice, as creating evidence-based treatments does not ensure their use in everyday practice. Proctor et al. (2008) define implementation strategies as specified activities designed to put into practice an activity or program of known dimensions. These strategies, which include various service systems or practice settings, human challenges, and properties of the interventions can either assist or hinder implementation. In the end a successful implementation is delivered in a way that is feasible and with fidelity to the intervention, responsive to the needs of the recipient of the intervention, and sustainable (Glisson & Schoenwald, 2005). The implementation of the COPE curriculum by Lusk and Melnyk (2011a) meets these three requirements. In a second publication by the authors (Lusk & Melnyk, 2011b), they
describe the lessons learned from implementing an evidence-based practice change. The COPE curriculum was feasible to deliver in a thirty minute session with an Advanced Practice Registered Nurse (APRN), met the needs of the adolescents as evidenced both by improvement in pre and post test scores and their subjective responses in evaluation of the program, and was sustainable in that the COPE session was reimbursed at a rate higher than a medication management visit alone. The focus of this current project was the re-design of pediatric primary care to deliver this cognitive behavioral intervention. This project received Institutional Review Board approval from Grand Valley State University (Appendix B).

**Project Intervention**

The COPE curriculum contains seven cognitive skills building sessions presented in a manualized format. The sessions were administered in an individualized, outpatient format, in a thirty minute appointment. The focus of each of the seven sessions is listed below:

- Thinking, feeling, and behaving: What is the connection?
- Positive thinking and forming healthy thinking habits
- Coping with stress
- Problem solving and setting goals
- Dealing with emotions through positive thinking and effective communication
- Coping with stressful situations
- Putting it all together for a healthy you (Melnyk, 2007).

Each session was delivered exactly as it is written so that the participants receive the same intervention in a pure dose format (Weersing, 2010). Each session involved
homework to be completed between the seven outpatient sessions. In Lusk and Melnyk’s (2011a) study they found their participants averaged twelve weeks to work through the seven sessions. To insure fidelity to the intervention, the researcher attended a COPE training conference delivered by Lusk under the direction of the developer of the curriculum, Melnyk.

**Project Location**

This project was implemented within a private pediatrics practice in a mid-size Midwestern city. According to the 2010 United States Census, there are 172,000 residents in this county and 24% of these residents are under the age of 18 years. Seventy-seven percent of the residents define themselves as White, of non Hispanic heritage and 18% of the residents live at or below the poverty line (United States Census Bureau, 2010).

This practice employed two full-time Pediatricians and two full-time Doctor of Nursing Practice (DNP) prepared Pediatric Nurse Practitioners. According to the practice administrator, this practice had approximately 6,000 patients with approximately 40% insured through the state’s health plan Medicaid, which is a state-funded insurance for those who qualify (C. Dyksterhouse, personal communication, September 12, 2011). Given the previously cited statistics about the prevalence of depression among those living in poverty and the lack of access to mental health care for those adolescents with state funded insurance, this practice was an ideal implementation site.
Measures

Patient Health Questionnaire-2

The Patient Health Questionnaire-2 (PHQ-2) is a means to screen adolescents for depression (Richardson, Rockhill, et al., 2010). The PHQ-2 represents the first two questions of a larger tool, the Patient Health Questionnaire-9 (PHQ-9), which is also a depression screen. The Diagnostic Interview Schedule for Children (DISC-IV) is another tool for diagnosing depression in children that is reliable and valid, however, requires a structured interview and training in its use. In the case of this discussion, it is used as a reference tool for other depression measures.

The PHQ-2 asks the responder to rate the frequency of two symptoms in the past two weeks: depressed mood, and lack of pleasure in usual activities. The responders are to rate these symptoms on a Likert scale of 0 (not at all) to 3 (nearly every day), so scores range between 0 and 6. A score of greater than or equal to 3 on the PHQ-2 in adult samples is found to be both highly sensitive and specific for major depression on the basis of a structured interview (Richardson, McCauley et al., 2010). These findings were validated with an adolescent sample by Richardson, McCauley et al. (2010). They reported the optimal cut point for maximizing sensitivity of the PHQ-2 without loss of specificity was a score of greater than or equal to three. At this score the PHQ-2 has a sensitivity of 96.2% for detecting probable major depression when compared to the PHQ-9 criteria and 73.3% sensitivity when compared to the DISC-IV criteria. Specificity is reported as 82.3% for detecting youth with major depression on the PHQ-9 screen and 75.2% on the DISC-IV.
Patient Health Questionnaire-9

The PHQ-9 contains nine questions asked along a Likert scale with (0) meaning not at all to (3) nearly every day. A score of greater than or equal to eleven maximizes sensitivity without losing specificity (Richardson, Rockhill et al., 2010). A score of eleven or more has a sensitivity of 89.5% and a specificity of 77.5% for detecting youth who meet the DSM-IV diagnostic criteria for depression (Richardson, Rockhill et al., 2010). In their work with adolescents, Richardson and Rockhill et al. (2010) do not report a test-retest reliability measure. However, Zuithoff et al. (2010) reported a test-retest reliability measure of 0.94 in their study of 1338 adult subjects from a general practice waiting room irrespective of their presenting complaint.

Richardson, Rockhill et al. (2010) support the use of the PHQ-9 for those with a PHQ-2 score of 3 or higher. They suggest the PHQ-9 provides more information on depressive symptoms and has better specificity for major depression than the PHQ-2 and includes a suicide question, which is an important cause of mortality among adolescents. The authors concluded the ease of scoring this tool and its brief nature make it a good tool for primary care screening. The PHQ-9 is available at no cost in the public domain and can is included in Appendix C.

Youth Self Report

The Youth Self Report (YSR) is a popular tool to measure the function of adolescents in the areas of mental health, juvenile delinquency, health, and general well-being. It can be used alone or in conjunction with the parent form, the Child Behavior Checklist (CBCL) or the Teacher’s Report Form (TRFO). These forms have been used in mental health settings, educational settings, medical settings, forensic contexts, and
The Youth Self Report (YSR) consists of 112 items scored on a three-point Likert scale (0=absent, 1=occurs sometimes, 2=occurs often). The YSR measures function in eight separate categories or syndrome scales and test-retest reliabilities and alpha coefficients for internal consistency are reported for each. The YSR measures functioning in the category of Internalizing symptoms. This category includes scores for anxious/depressed (r=.74, alpha=.84), withdrawn/depressed (r=.67, alpha=.71) and somatic complaints (r=.76, alpha=.80). The YSR also measures Externalizing symptoms. This category includes rule-breaking behavior (r=.83, alpha=.81) and aggressive behavior (r=.88, alpha=.86). Last, the YSR measures scores in the categories of social problems (r=.74, alpha=.74), thought problems (r=.78, alpha=.78), and attention problems (r=.87, alpha=.79) (Achenbach & Rescorla, 2001). Reliability was not calculated for the current project due to the small number of participants.

The YSR also demonstrates content validity. Achenback and Rescorla (2001) write, “the content validity of the CBCL, YSR, and TRF items has been strongly supported by nearly four decades of research, consultation, feedback, and refinement, as well as by the current evidence for the ability of all the items to discriminate significantly (p<.01) between demographically similar referred and nonreferred children“ (p. 109).

The YSR can be hand scored or computer scored. For the purposes of this project, it was hand scored. For each category a total score is calculated from the items in that category or syndrome scale. The total score is then converted to a T-score (or percentile ranking by gender), which provides a way to quickly judge whether youth report higher levels of problems than are reported for normative samples of nonreferred
children. Achenbach and Rescorla (2011) suggest using raw scale scores rather than the T scores in order to take account of the full range of variation in these scales. A sample of the YSR can be viewed at www.aseba.com.

**Measurement of Adolescent Participant Satisfaction: Youth Client Satisfaction Questionnaire**

The Youth Client Satisfaction Questionnaire (YCSQ) was developed to measure satisfaction with mental health services for young clients (Shapiro, Welker, & Jacobson, 1997). Permission to use the tool was granted by the authors (Appendix D). The tool contains 14 items measured on a four point Likert-type scale for a possible range of scores from 0 to 42. The YCSQ avoided using the terms somewhat or satisfied as these terms may be difficult for teens to understand and may not be familiar terms. Shapiro et al. (1997) tested the tool for reading level and it was scored at a Grade 4.3. The tool was tested with 150 adolescents whose mean T-score on the YSR was 57.33. The total score test-retest reliability coefficient was .92 and the internal consistency Cronbach’s alpha was .90. A principal components analysis revealed two major factors of youth consumer satisfaction: Relationship with therapist and Benefits of therapy. The cross loadings of the items, however, suggests these two factors are only semi-independent.

In the pilot testing by Shapiro et al. (1997), YCSQ scores were highest among males and among clients from age 11 to 13 years. There was no relationship between ethnicity, parental employment, history of juvenile delinquency, or history of previous mental health treatment and YCSQ scores. Last, the authors reported a lack of statistically significant relationship between YCSQ scores and pretest to posttest scores on the YSR scales measuring Behavior Problems ($r=-.04$), Internalizing ($r=-.05$), or
Externalizing (r=-.11). The authors used five other measures for treatment effectiveness and found a statistically significant relationship between YCSQ scores and treatment effectiveness. Psychometric statistics were not calculated for this project due to the small number of participants. A copy of the YCSQ can be found in Appendix E.

Measurement of Referring Provider Satisfaction

As stated previously, the study site employed four patient care providers: two Pediatricians and two Pediatric Nurse Practitioners. For the purposes of this feasibility study for primary care, it was important to get the feedback of those involved in the referral process. Given the small number of referring providers, an informal, more qualitative method was used to elicit their opinions. Each provider was given the opportunity to provide feedback at the end of the project by answering simple multiple choice and open ended questions: Do you feel the COPE curriculum is a feasible intervention within a primary care setting? How could the COPE implementation carried out in this project be improved for future use? Were you aware of the implementation of COPE with your patients and families? Responses were anonymous. An example of this data collection tool is found in Appendix F.

Sample

The sample for the intervention, the COPE curriculum, was a real-world, convenience sample of depressed adolescents who screened positive for depression at the private pediatric practice. The review of the literature supported a more effective CBT response among older participants, those with more formal operational thought and those more actively exploring their identity. Therefore, for the purpose of this intervention, adolescence was defined as between the ages of 14 and 18. Adolescents were excluded
from this study if their presentation included active suicidality or acute psychosis as they would be referred for immediate mental health assessment and treatment, or mental retardation as the cognitive portions of the intervention may not be suitable for them. Adolescents were also excluded if they were currently receiving any kind of counseling therapy as the goal of this project was not to interrupt an established counseling relationship.

Ideally 25-30 adolescents would have been recruited for this intervention. However, given time constraints, difficulties recruiting, internal personnel challenges within the organization, and a high level of attrition, eleven subjects were recruited and ten subjects completed the consent process. Of those ten subjects, three completed the consent process but did not make any future appointments, five completed the consent process and attended between one and three COPE sessions, and two completed the COPE intervention. Within the total recruited sample, nine recruited subjects were female, two were male, nine were Caucasian, and two were African American. The mean age of recruited participants was 16 years with the youngest participant 15 years and the oldest 18 years. Three participants were taking antidepressant medications at recruitment. The mean PHQ-9 score at recruitment was 14 with zero the lowest score and 27 the highest score.

On the PHQ-9, two subjects had results at the extreme ends of the measure. There was a score of zero from one participant. Her participation in the COPE intervention was required by her provider as a condition for taking antidepressant medication. There was also a score of twenty-seven, which is the maximum score. This participant had been involved in the private sector mental health system and the public
community mental health sector. She had a history of psychotropic medication use. She did not finish the intervention. When these two scores are removed, the mean PHQ-9 score for participants at the beginning of the intervention remained 14.

This project also involved two pediatric nurse practitioners (PNP) and two pediatricians. One of the nurse practitioners has been in practice for ten years and the other for nineteen. They were both initially master’s prepared nurse practitioners, but had both recently completed a Doctor of Nursing Practice program. One of the PNPs also served as affiliate faculty at Grand Valley State University and is a member of the committee for this project. Both of the nurse practitioners were between 45 and 55 years old. Both of the pediatricians were educated as Osteopathic Physicians. One of them has been in practice for 24 years and the other for 34 years. Both of the pediatricians were between 60 and 70 years old.

**Procedure**

In order to launch this project, an exploratory inservice was held approximately four months prior to implementation. This inservice was attended by the practice administrator, the two nurse practitioners, and the two pediatricians. The problem of adolescent depression, the research supporting the COPE intervention, and the proposed process for implementation were reviewed with the attendees. The attendees agreed to proceed. At this point, the nurse practitioners shared that the PHQ-2 and PHQ-9 depression screening method was in use at the office among teens with obesity seeing the
nurse practitioners. The clinical staff who worked with the nurse practitioners were familiar with this screening process.

Just prior to implementation, and approximately four months after the first inservice, a second inservice was held for the practice administrator, the nurse practitioners, and the pediatricians. At this time, the recruitment process was reviewed and a handout provided. A time for questions and answers followed. All the providers agreed to proceed. At the conclusion of the inservice, however, some discussion between the pediatricians and nurse practitioners started regarding willingness to cooperate with this referral and recruitment process.

Also just prior to implementation, a meeting was held for the clinical staff. The purpose of the meeting was to review the recruitment and the PHQ-2 and PHQ-9 screening processes. Only the clinical staff who worked for the nurse practitioners and who were already doing the screening were present. The clinical staff who worked for the pediatricians did not attend as they were told they would not be paid for attending. The screening and recruitment processes were reviewed individually at a later date and time, during regular work hours, with the clinical staff who worked with the pediatricians and did not attend the original inservice. At each session, the clinical staff was given the opportunity to ask questions. The front desk staff and scheduling staff were also provided with information about scheduling, reminder phone calls, and checking patients in. They also had an opportunity to ask questions.

The first step in this project was to begin depression screening for all adolescents between the ages of 14 and 18 who presented to the pediatric practice, regardless of chief complaint. The PHQ-2 and PHQ-9 method already in use at this practice was expended
for all eligible participants, an evidence-based process supported by the USPSTF (2009). Adolescents who screened positive on the PHQ-9 with a score of 11 or greater were then referred by the primary care provider to the researcher to review treatment options: treatment as usual or the COPE intervention. To avoid coercion, a script was used to introduce the options to the parent and his or her adolescent (Appendix G).

**Treatment as Usual (TAU)**

At the time of this project implementation, the PHQ-2 was being used by both of the pediatric nurse practitioners in their work with obese adolescents. The PHQ-2 was administered verbally and scored by the medical assistant. If an adolescent screened positive for depression on the PHQ-2, he or she was administered the PHQ-9 which was scored by the care provider. Prior to this study, adolescents who screened positive on the PHQ-9 were counseled about their results and referred to an outside mental health provider. Often this choice was dictated by their insurance carrier. If the provider made a decision regarding treatment with an anti-depressant medication, this treatment was dependent upon some kind of counseling with an outside agency. The providers at this practice required progress notes from psychologists or social workers to continue prescribing medications. For the patients and families who chose this TAU intervention, the providers or the practice provided them with a list of mental health providers who participated with their insurance and were available for treatment.

**COPE Intervention**

The COPE intervention was an alternative to TAU. Those who screened positive were offered the voluntary opportunity to participate in the COPE intervention (see Appendix G for script). Participation in this intervention did not preclude treatment with
medication. If the COPE curriculum was chosen, the parental consent and adolescent 
assent process commenced. The parent also completed a Healthcare Insurance Portability 
and Accountability Act (HIPAA) release form which allowed access to the patient’s chart 
for demographic information and the results of the initial PHQ-9 survey.

In the first meeting with the adolescent, the following goals were set, similar to 
those by Lusk and Melnyk (2011a), (a) begin to establish a therapeutic relationship, (b) 
provide education about the treatment of depression, (c) answer questions, (d) provide 
evidence to support the intervention, and (e) instill hope for positive results. These goals 
are consistent with those identified by McCarty and Weisz (2007) in their meta-analysis 
of effective psychotherapy. The adolescents and their parents were offered the resource: 
*Frequently Asked Questions on Child and Adolescent Depression* from the American 
Academy of Child and Adolescent Psychiatry (Appendix H).

Numbered packets were prepared for each subject. These included all the pre and 
post testing instruments. These were labeled with a number to keep all the instruments 
and data together. The list of names and numbers were kept in a secure location. These 
lists will be kept for three years to be consistent with national research guidelines for the 
use of human subjects. When all the proper documentation was obtained, a baseline 
Youth Self Report (YSR) was administered and scored, and the adolescent was scheduled 
to begin his or her first COPE session. The COPE sessions were scheduled in thirty 
minute time slots during the normal hours of the pediatric practice by the front desk staff. 
Every effort was made to accommodate the potentially difficult scheduling of adolescent 
patients, however the practice was only open Monday through Friday from 8am to 5pm. 
To maximize appointment adherence, reminder phone calls were made by the scheduling
department. Parents were encouraged to be active participants in their child’s care by attending COPE sessions, but their attendance was not required.

The COPE intervention was delivered individually to each participant, ideally once a week for 30 minutes. If a session was missed due to illness, school conflicts, transportation difficulties, the missed COPE session was delivered at the next appointment to maintain the order of the manualized intervention. In their study, Lusk and Melnyk (2011a) found it took an estimated twelve weeks to work through the seven sessions. The format for each session was the same: review of homework and material from the previous session, introduction of new lesson content, and homework assignment. Each session was 30 minutes in length.

As cited previously, pediatric primary care providers are frustrated with lack of communication within the mental health arena. In an effort to maintain communication, the referring providers received verbal progress updates regarding the progress of their patient in the COPE curriculum. As the adolescent moved through the intervention, if a concern arose about increasing levels of depression that may benefit from treatment with anti-depressant medication, the patient was referred back to the primary care provider for medication management. Also, if the adolescent demonstrated or verbalized suicidal ideation, intent, or plan the patient would be referred to the local Emergency Department for a Mental Health Assessment. This did not occur during this intervention.

The subjects who completed the COPE curriculum also completed a post-intervention YSR and YCSQ. The referring provider received confirmation at the conclusion of the curriculum when patients completed the course. The referring provider
could then schedule follow-up appointments as needed. The participants were encouraged to schedule a follow-up appointment within the next month.
Chapter 4

RESULTS

The question that guided this project was: Is it feasible for a doctorally prepared PNP to implement a manualized cognitive behavioral intervention within pediatric primary care to improve depression related outcomes among a real world sample of depressed adolescents and demonstrate patient and provider satisfaction with the care delivered? The results that follow attempt to answer the question this project posed.

Feasibility of Implementation

This feasibility project occurred from March through July of 2012. Once the Institutional Review Board approval was granted, the investigator started receiving referrals. Particularly, the nurse practitioner who is also a member of this project committee had a patient she was excited to refer and felt would benefit from this intervention. Following this patient, referrals gradually started coming at the rate of about one per week for the next couple months. During this time, the investigator started spending a full day at the practice weekly to create a presence within the practice, be available to answer questions, and develop a relationship with staff and referring providers. The practice administrator made office space available for the investigator.

Shortly after the referral process was initiated, in late March, one of the nurse practitioners announced her plans to leave the practice in May. In April, this announcement was followed by a similar announcement from the other nurse practitioner, who is a member of this project committee, to leave the practice in June. The announcement of the pending departure of both nurse practitioners within a short time caused some changes in the office environment. The clinical staff became concerned
about their future employment and roles within the practice. The practice administrator and clerical staff became concerned about reassigning patients to other providers and answering patient and parent questions regarding future care. The nurse practitioner time with patients now involved discussing this transition with their patients and assisting them to decide where to receive future care. The pediatricians expressed anger and frustration with the upcoming practice changes as well. Prior to these announcements, however, the practice had recruited a new pediatrician to join them in August.

Approximately one month into the referral and recruitment process, it was clear all the referrals were coming from the same provider. The investigator followed up with the providers and clinical staff regarding this. One pediatrician and one nurse practitioner stated they were screening patients, but did not have any eligible referrals. The other pediatrician’s clinical staff confirmed that he had asked them not to screen patients. Among those screening, there were no questions or difficulties expressed about the process. The last referral was received shortly before the last nurse practitioner left the practice. By June, there were no more referrals.

Sample Characteristics

The characteristics of the sample and their participation in the COPE curriculum are presented in Table 1. The participants who did not complete the intervention were a mean of 1.4 years older than the participants who did complete the intervention. Research tells us that older subjects, who are more formal operational in their thought, should receive a larger benefit from a cognitive-behavioral intervention. Two of the subjects were African American and neither completed the intervention. Nine of the recruited subjects were female, supporting the finding that depression is more prevalent
among females than males. This is to be interpreted with caution, however, as the primary referring provider was female who very likely had a larger proportion of female than male patients.

Table 1

Characteristics of Sample by Baseline Data and Level of Participation

<table>
<thead>
<tr>
<th>I.D.</th>
<th>Age</th>
<th>Antidepressant Medication</th>
<th>Ethnicity</th>
<th>PHQ-9 Score</th>
<th>Sessions Attended</th>
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<td></td>
<td></td>
<td></td>
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<td>African American</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>16</td>
<td>No</td>
<td>Caucasian</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Completed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>Yes</td>
<td>Caucasian</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>15</td>
<td>No</td>
<td>Caucasian</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

*aParticipant 8 is the only male participant

Three participants (number 3, 5, and 6) did not attend any sessions following the consent process. In following up with the parents of these participants, one parent quoted her daughter as saying, “It [the COPE curriculum] feels too much like being in counseling.” Another mother reported her daughter changed her mind. The sixth subject refused to go to the scheduled appointment. Further, subject 6 had missed approximately 50% of school days that semester due to school refusal and headaches.

Five participants (numbers 1, 2, 7, 8, and 9) attended a portion of the sessions. At varying times in the course of the intervention the burden of getting to the study site
could not be overcome by the value of what the participant was learning. For example, two subjects attended one session and then quit coming. One of these, subject 1, was a busy community college student who was working two jobs to try to stay in school. This was the subject the nurse practitioner was eager to refer to the COPE curriculum. Another quit after one session without explanation or follow-up. Efforts were made to contact the patient and mother, but no future appointments were made. Two participants attended three sessions each. Both of these participants had lived with a complicated social situation. One was removed from both her mother’s and her father’s care and her great grandmother was appointed her guardian by the court. This family lacked reliable transportation and the great grandmother was disappointed at not being able to finish the sessions. The other participant had been estranged from her family for a long time and lived with her boyfriend while attending community college. She also lacked transportation and relied on walking or taking her bicycle to appointments. The last participant in this category, participant number 8, was male and attended four sessions. He lived in a community that was a 40 mile drive to the practice site and was the youngest of three sons in a single parent household. Both of the other sons had chronic medical conditions requiring frequent physician appointments and follow up. Of note, two patients in this subgroup took psychotropic medications prescribed by outside agencies such as a private psychiatrist or Community Mental Health.

The two participants (number 4 and 7) who completed the COPE intervention were both female. One participated in the program because she was taking an antidepressant medication prescribed by one of the pediatric nurse practitioners in the practice. It is the policy of the practice that patients taking such medications prescribed
within the practice also attend a form of counseling. Her family had recently lost their insurance due to the father’s unemployment and therefore opted for the COPE intervention even though her PHQ-9 score did not meet the inclusion criteria. The other adolescent expressed a desire to participate in the program even though her score was also technically below the threshold for consideration for depression. She spent the majority of the time she was enrolled in the study without social privileges due to poor academic performance in the prior semester. The COPE sessions were one of the few outside activities she was allowed to attend during the summer.

**Depression Related Outcomes**

For the purpose of this project, depression related outcomes were measured using the PHQ-9 and the YSR. The PHQ-9 measures the components of the DSM-IV criteria for the diagnosis of depression. A score of greater or equal to 11 is considered to be an indication of depression. The mean PHQ-9 results for the three categories of participant can be found in Table 2. The subjects who consented, but did not begin the intervention and those who attended between one and four COPE sessions scored higher on the pre-intervention PHQ-9 than the subjects who did complete the intervention. For the two participants who completed the intervention, participant number 4 had a pre-intervention PHQ-9 score of 0 and a post score of 4; participant 7 had scores of 9 and 9. The PHQ-9 contains nine items which align with the DSM-IV criteria for the diagnosis of depression. A copy of this screening tool can be found in Appendix B. Table 3 displays the PHQ-9 score on each item for each participant by level of participation.
Table 2

Pre and Post Intervention Mean PHQ-9 Results by Level of Participation.

<table>
<thead>
<tr>
<th>Subject Type</th>
<th>PHQ-9 Score</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended 0 sessions</td>
<td></td>
<td>16.0</td>
<td></td>
</tr>
<tr>
<td>(n=3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attended 1-4 sessions</td>
<td></td>
<td>16.6</td>
<td></td>
</tr>
<tr>
<td>(n=5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attended 7 sessions</td>
<td></td>
<td>4.5</td>
<td>6.0</td>
</tr>
<tr>
<td>(n=2)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Among the participants who did not attend any sessions following the consent process, the highest scores were for items number 2, 3, and 7. Item 2 asks about feeling down, depressed, irritable, or hopeless. Item 3 asks about trouble falling asleep, staying asleep, or sleeping too much. Item 7 asks about either moving or speaking slowly or being fidgety or restless.

Among the participants who attended a portion of the sessions, the two highest scores were for items number 2 and 3, the same as the participants who did not attend any sessions. Therefore this portion of the sample reported feeling depressed and was also experiencing difficulties with sleep. It was not possible to distinguish the third highest score, however, as the following three item scores were the same: little interest or pleasure in doing things, feeling tired or having little energy, and trouble concentration on things.
The participants who completed the intervention, however, had the highest pre-intervention scores for item number 3, similar to the other two groups, and item 1. Item one questions the participant about a loss of interest or pleasure in doing things.

Table 3

Pre Intervention PHQ-9 Results by Item Number and Level of Participation.

<table>
<thead>
<tr>
<th>Participant and Category</th>
<th>PHQ-9 Item Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td><strong>0 Sessions</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1 2 3 1 2 3 3 1 0</td>
</tr>
<tr>
<td>5</td>
<td>2 3 1 1 0 3 2 1 3</td>
</tr>
<tr>
<td>6</td>
<td>3 3 3 3 2 0 3 0 0</td>
</tr>
<tr>
<td>Item Number Mean</td>
<td>2.0 2.7 2.3 1.7 1.3 2.0 2.7 0.7 1.0</td>
</tr>
<tr>
<td><strong>1-4 Sessions</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3 3 3 2 2 1 2 0 0</td>
</tr>
<tr>
<td>2</td>
<td>1 3 2 2 0 0 0 1 1</td>
</tr>
<tr>
<td>7</td>
<td>3 3 3 3 3 3 3 3 3</td>
</tr>
<tr>
<td>8</td>
<td>2 0 3 1 2 0 3 3 2</td>
</tr>
<tr>
<td>9</td>
<td>1 2 3 2 2 1 2 1 0</td>
</tr>
<tr>
<td>Item Number Mean</td>
<td>2.0 2.2 2.8 2.0 1.8 1.0 2.0 1.6 1.2</td>
</tr>
<tr>
<td><strong>Completed</strong></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>10</td>
<td>2 1 3 1 0 0 1 1 0</td>
</tr>
<tr>
<td>Item Number Mean</td>
<td>1.0 0.5 1.5 0.5 0.0 0.0 0.5 0.5 0.0</td>
</tr>
</tbody>
</table>

The YSR measures outcomes in the categories of internalizing symptoms (anxious/depressed, withdrawn/depressed, somatic complaints), externalizing symptoms (rule-breaking behavior, aggressive behavior) and other (social problems, thought problems, attention problems, other problems). The YSR results for the three categories of participant can be found in Table 3. Scores are reported as total scores with their
corresponding t-scores. The higher the total and t-scores, the more the participant displays the scaled symptoms. The t-score can be equated to a percentile ranking by gender.

Table 4

Pre and Post Intervention YSR Results Reported by Subject within Level of Participation

<table>
<thead>
<tr>
<th>Category</th>
<th>Other</th>
<th>Internalizing</th>
<th>Externalizing</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total T-score</td>
<td>Total T-score</td>
<td>Total T-score</td>
<td>Total T-score</td>
</tr>
<tr>
<td>0 Sessions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre 3</td>
<td>5</td>
<td>1</td>
<td>32</td>
<td>7</td>
</tr>
<tr>
<td>Pre 5</td>
<td>13</td>
<td>11</td>
<td>51</td>
<td>12</td>
</tr>
<tr>
<td>Pre 6</td>
<td>19</td>
<td>19</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>1-4 Sessions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre 1</td>
<td>21</td>
<td>36</td>
<td>75</td>
<td>12</td>
</tr>
<tr>
<td>Pre 2</td>
<td>25</td>
<td>24</td>
<td>64</td>
<td>29</td>
</tr>
<tr>
<td>Pre 7</td>
<td>48</td>
<td>39</td>
<td>78</td>
<td>32</td>
</tr>
<tr>
<td>Pre 8a</td>
<td>36</td>
<td>33</td>
<td>76</td>
<td>37</td>
</tr>
<tr>
<td>Pre 9</td>
<td>32</td>
<td>40</td>
<td>79</td>
<td>12</td>
</tr>
<tr>
<td>Completed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre 4</td>
<td>13</td>
<td>2</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>Post 4</td>
<td>11</td>
<td>4</td>
<td>40</td>
<td>2</td>
</tr>
<tr>
<td>Pre 10</td>
<td>39</td>
<td>17</td>
<td>58</td>
<td>24</td>
</tr>
<tr>
<td>Post 10</td>
<td>37</td>
<td>11</td>
<td>51</td>
<td>26</td>
</tr>
</tbody>
</table>

*aThis subject is male, and therefore t-score values are calculated on the male gender scales

Given the limited sample size, especially among those who completed the intervention, the use of parametric testing in this data set is not possible. However, the data does reveal some trends. In terms of internalizing depression symptoms such as having somatic complaints or being anxious or depressed, the subgroup who attended 1 to 4 COPE sessions demonstrated the highest scores. This same subgroup had the highest
scores in the area of externalizing symptoms, such as rule-breaking behavior and aggressive behavior. Last, this subgroup had the highest scores in the area of other. This category involves the symptoms of social problems, thought problems, and attention problems.

The subgroup who did not attend any COPE sessions had the second highest scores on the YSR. Two of the participants in this subgroup had a total t-score of greater than 50, meaning they displayed more depressive symptoms overall than at least fifty percent of the population.

Ironically, the subgroup with the lowest pre-intervention YSR scores was the subgroup that completed the intervention. This was a similar finding among the PHQ-9 scores. Unfortunately in this project, the most depressed portion of the sample, as measured by the PHQ-9 and YSR, also the most likely to benefit portion of the sample, did not complete the intervention.

**Patient Satisfaction**

Two subjects completed the entire COPE intervention. One subject chose to do the intervention. The other subject was externally forced to do the intervention as a condition of her antidepressant medication. These subjects both completed the 4 point Likert-style YCSQ. Five questions in this instrument assessed the relationship between the patient and the therapist. In these five questions the subjects rated the relationship with the therapist either a three or a four, indicating a favorable relationship with the therapist. Nine items in this instrument assessed the benefits of counseling. In the nine items, one responder answered all items with either a three or a four, indicating a high level of satisfaction. The other responder answered either a three or a four on all items
except for one. This item asked, “Did you understand what your goals were in counseling?” The subject answered a two on the Likert scale indicating a low level of understanding. This subject was the one who chose to be a part of the intervention.

At the conclusion of the survey, there was an opportunity to provide individual comments about the experience. When asked what the best thing about counseling was, one subject wrote she enjoyed talking, and the other subject wrote about how the experience helped her talk about problems with family and friends. When asked what the worst part of counseling was one subject wrote about the drive to the office, and the other indicated there was nothing bad about the experience. When prompted for additional comments, neither subject provided any.

**Referring Provider Satisfaction**

One of the goals for this project was to provide an intervention that met referring provider satisfaction. There were four providers in this office, two pediatricians and two doctorally prepared pediatric nurse practitioners. All four providers were surveyed using the qualitative instrument shown in Appendix F. The two PNPs responded and neither of the pediatricians responded. Both PNPs agreed the COPE curriculum was a feasible intervention within pediatric primary care. One of the PNPs commented, “This is a feasible intervention because the patients are identified at the office and the intervention then takes place at this same location, where the patient is already familiar and comfortable.”

When asked about observing the benefits of the COPE intervention among patient participants one of the PNPs wrote, “Parents of participants commented to me that they were seeing some better decision making by their child. Parents told me they were
pleased with the program.” This PNP strongly agreed about benefits of the COPE intervention. The other PNP was unable to respond as she did not have any patients who met eligibility requirements to enter the study.

Both PNPs agreed or strongly agreed with the statement about the ability of a pediatric nurse practitioner to provide a cognitive-behavioral intervention within pediatric primary care for depressed adolescents. One of them commented, “The PNP has the qualifications and skills to be able to provide the interventions needed to these children.” The other PNP commented about the theory behind the intervention being sound. However, she expressed concerns about reimbursement affecting the sustainability of the intervention. When asked to provide feedback about the intervention and the planning of future interventions, the same nurse practitioner expressed concern about the implementation of the project during the spring and summer. In her opinion, this affected referrals as she notes a higher incidence of depressed adolescents in the winter.
Chapter 5

DISCUSSION

This project examined the feasibility of a doctorally prepared PNP to implement a manualized cognitive behavioral intervention within pediatric primary care to improve depression related outcomes among a real world sample of depressed adolescents and demonstrate patient and provider satisfaction with the care delivered. The project emphasized the viability of the intervention including identifying actual or potential problems and attempting to answer one main question: Will the idea work and should one proceed with it?

Project Feasibility

The evidence from this project suggests the implementation of a cognitive behavioral intervention within primary care is an alternative to treatment as usual. However, problems were identified in the areas of recruitment and attrition as well as concerns with level of practitioner reimbursement.

Recruitment

This project was carried out over a five month period from late winter through the middle of summer. During that same time, this practice employed four care providers: two pediatricians and two pediatric nurse practitioners. All four providers attended inservices about this project, had an opportunity to ask questions, and agreed to proceed with the project. However, only one of the pediatric nurse practitioners recruited and referred patients to the COPE intervention. Attempts were made to understand these referral patterns. One of the pediatricians reported not screening patients using the PHQ-2 to PHQ-9 process without giving an explanation. The other pediatrician commented on
appropriately screening, but not finding any patients meeting criteria for referral and recruitment. This was similar with the other pediatric nurse practitioner. The one pediatric nurse practitioner who provided referrals was a member of the faculty at Grand Valley State University and committee member for this project.

The results of the referral and recruitment process are at odds with rate of adolescent depression reported in the literature. According to Merikangas, He, Brody, et al. (2010) approximately one in every four or five youth in the U.S. meet criteria for a mental disorder with severe impairment across his or her lifetime. During the five month implementation period, the four providers in this practice each saw about 100 patients every week, or about 400 patients total each week practice wide. This reflects patients of all age categories, birth through age 18. However, if one assumes at least ten percent of these total patients seen were between the ages of 14-18, with twenty to twenty-five percent screening positive, eight to ten weekly referrals would be predicted. In contrast, a total of eleven patients were referred, all by the same provider. Of those eleven referred, ten completed the consent process and were successfully recruited. A possible explanation for this recruitment difficulty was shared by one of the doctorally prepared pediatric nurse practitioners at the practice site. The timing of this project involved the spring and summer months. In her experience, there is an increase in depressive symptoms in the winter and a decrease in the spring and summer months.

Half of the providers in the project site demonstrated resistance to the evidence-based translational research process by neither screening patients nor providing referrals. A careful organizational culture and readiness to change assessment process should have been completed prior to implementation. Such an assessment might have avoided this
difficulty. Many authors speak of this process. Specifically, Smith and Donze (2010) write about organizational assessment. They propose questions that help the practice define and verbalize its organizational priorities, discuss how an evidence-based practice implementation might help achieve those priorities and identify the amount of value the organizational culture places on evidence and its resultant change. Asking the question, “Does the organizational culture support change and value evidence?” (Smith & Donze, p. 68) would have likely revealed differences among providers with regard to willingness to change practice at that point in their careers.

For this practice site, a careful assessment of not only the organization but the relationships among interdisciplinary providers should have been conducted. According to Smith and Donze (2010), asking a question about the level of mutual respect and trust among the members of the interdisciplinary team is also crucial. For example, asking, “Is there a strong commitment to the process from all interdisciplinary team members and their leadership?” or “Are there positive relationships and trust between the members of the interdisciplinary team?” (p. 68) may have revealed some of the personality differences that existed among the providers of care which ultimately interfered with implementing this project. These difficulties among providers became evident during the course of this project, with both nurse practitioners leaving the practice to pursue employment elsewhere.

Another contribution to resistance in the recruitment process may have been a lack of professional and personal credibility among the providers for the investigator. Despite the investigator’s twelve years of experience as a pediatric nurse practitioner prior to the implementation of this project, the providers in the office were unaware of the
abilities of the investigator as a nurse practitioner. The only role the investigator fulfilled within the project site was that specific to the COPE project. Without implementing the traditional clinical role of the pediatric nurse practitioner, such as sick and well child care, it was difficult to implement the additional clinical role related to the COPE curriculum.

Attrition

The attrition rate for this intervention was 80%. This is a high attrition rate but not totally unexpected. The President’s New Freedom Commission reported rates of 40% to 60% attrition, with teens usually only attending one or two mental health appointments (U.S. Department of Health and Human Services, 2003). In stark contrast to this, the COPE intervention by Lusk and Melnyk (2011a) reported a zero percent attrition rate. To partially explain this, Lusk and Melnyk’s intervention was conducted in the evening, allowing parents to transport teens after work, and for the teens to participate in school activities.

Practitioner credibility may partially explain this phenomenon as well. The investigator only interacted with the participants in the additional clinical role of the COPE project. The investigator did not interact with the participants for any other care such as sick or well child care. The investigator also lacked longitudinal relationships with adolescents and their family members which may have contributed to a low level of commitment from those recruited. This is consistent with McCarty and Weisz (2007) who write about establishing a therapeutic alliance; in the context of adolescent mental health teens must perceive that the therapist is invested in the client. While this may have
contributed to attrition, the two subjects who completed the intervention reported a positive interaction with the investigator.

Characteristics of the sample likely contributed to the high attrition rate also. In the pre-intervention PHQ-9 screening, the subgroup who did not complete any COPE sessions following the consent process and the subgroup who completed between one and four sessions following the consent process both had high scores in the area of sleep difficulties: falling asleep, staying asleep, or sleeping too much. Fatigue as a result of poor sleep or excessive sleep likely made attending COPE sessions difficult for those participants. These subgroups also scored highest in the area of feeling down, depressed, irritable, or hopeless. Depressed or hopeless feelings may contribute to a sense of apathy or lack of motivation regarding treatment. Both of these characteristics interfered with treatment regardless of where it was offered or the relationship with the provider offering the treatment.

**Reimbursement**

Ultimately the migration of an intervention like COPE from a Doctor of Nursing Practice project to an evidence-based practice change will largely depend on reimbursement and management of the payer mix. The “evaluation and management” code 90804 of Current Procedural Terminology (CPT) is defined by the Centers for Medicare and Medicaid Services (2012) as “Individual psychotherapy, insight oriented, behavior modifying, and/or supportive, in an office or outpatient facility, approximately 20 to 30 minutes face-to-face with the patient.” This definition encompasses the COPE curriculum. The CPT code 90805 is also potentially applicable as the Centers for Medicare and Medicaid Services define this as, “Individual psychotherapy, insight
oriented, behavior modifying, and/or supportive, in an office or outpatient facility, approximately 20 to 30 minutes face-to-face with the patient; with medical evaluation and management services."

Public and some private third party payers publish their most current reimbursement guidelines on websites (Michigan Department of Community Health, 2012; Blue Cross/Blue Shield [BC/BS] of Michigan, 2012). The CPT codes 90804 and 90805 require 20-30 minutes of a nurse practitioner’s time. In contrast, in a thirty minute time period, most nurse practitioners can see two pediatric patients for sick appointments and utilize the CPT code 99213. Table 5 highlights reimbursement by CPT code for Medicaid and BC/BS insurers. Of note, these numbers represent straight reimbursement and are not part of larger pay-for-performance measures. To account for thirty minutes of nurse practitioner time, the rates for the 99213 CPT codes are multiplied by two. An estimation of revenue differences is also provided.

Table 5

Reimbursement by CPT Code

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Reimbursement</th>
<th>99213 x 2 Reimbursement</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90804</td>
<td>$34.27</td>
<td>$56.38</td>
<td>$22.11</td>
</tr>
<tr>
<td>90805</td>
<td>$37.63</td>
<td>$56.38</td>
<td>$18.85</td>
</tr>
<tr>
<td>BC/BS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90804</td>
<td>$77.99</td>
<td>$135.00</td>
<td>$57.01</td>
</tr>
<tr>
<td>90805</td>
<td>$90.92</td>
<td>$135.00</td>
<td>$44.08</td>
</tr>
</tbody>
</table>

As Table 5 displays, implementing the COPE curriculum within a pediatric practice represents loss of revenue. There are at least three ways to diminish the impact
of this revenue loss. The first would be to monitor the number of clients receiving the COPE intervention at any given time. A client mix of 80% typical primary care pediatric nurse practitioner patients, such as sick and well child care, and 20% COPE intervention patients would help absorb some of the differences in reimbursement.

A second strategy for financial management applies not only to this intervention, but to general pediatric practice as well: maintaining a financially viable mix of Medicaid and private pay insurance patients. The practice site used for this project had approximately a 40% Medicaid payer patient base. While this is likely representative of the larger community to which this practice belongs, this is a high Medicaid patient base for a private practice. Other private practices in pediatrics, such as the one that employs this project investigator, maintain their percentage of Medicaid patients between 20% and 25%.

A third strategy would involve receiving increased reimbursement for CPT codes 90804 and 90805. This would involve either the use of pay-for-performance measures or increased parity for mental health diagnoses. First, pay-for-performance measures pay (or otherwise reward) health care providers differentially on the basis of the quality of their performance (Bremer, Scholle, Keyser, Knox Houtsinger, & Pincus, 2008). Pay-for-performance programs for mental health diagnoses historically are difficult to implement. Bremer et al. (2008) reviewed eleven primary care incentive plans from across the United States. They noted two difficulties with implementing these incentive plans. The difficulties involved (a) lack of valid and practical quality measures in behavioral health and (b) tying incentives to specific behavioral health outcomes. Their review also includes six recommendations for future pay-for-performance measures in
behavioral health. They suggest a more longitudinal perspective on quality measurement once outcome measures are developed that are valid, practical to implement and have a buy-in from multiple stakeholders. They suggest holding providers more accountable for the quality of care they provide and insuring the incentives that are offered to enhance provider performance are large enough to change provider behavior. Last, they suggest experimenting with new models for improving performance and rewarding quality making sure the approaches are specific to providers.

Another method to minimize the financial differences between the COPE intervention and providing physical health care to patients would be to deliver the COPE intervention among groups of similar patients. Group dynamics present a theme of universality among depressed adolescents and a group-administered, manualized cognitive behavioral intervention within a school setting has demonstrated effectiveness. The Teaching Kids to Cope (TKC) Program was implemented in three rural high schools in Pennsylvania among 89 participants who were randomized to receive the TKC program or usual care (Puskar, Sereika, & Tusaie-Mumford, 2003). The authors found significant differences in mean depressive symptomatology immediately following the intervention (p=0.26) and six months following the conclusion of the intervention (p=.027). Traditionally primary care is delivered individually. However, the use of group visits within primary care is emerging for management of chronic diseases. Group visits were found to increase self-management, a Chronic Care Model concept, for an adult population of diabetic patients in an academic health center (Dontje & Forrest, 2011).
Finally, as demonstrated in Table 5, a reimbursement difference exists between health care delivered that is mental health in nature versus physical health in nature. This provider reimbursement difference exists in spite of the 2008 legislation known as the Mental Health Parity and Addiction Equity Act. This federal law requires private health insurance plans to provide equal coverage for mental and physical health and is intended to improve access to appropriate treatment for people suffering from mental health disorders and extend equal coverage to all aspects of health insurance plans. While this legislation exists to benefit patients, it does not provide reimbursement parity for primary care providers who wish to provide mental health services within their facilities. Reimbursement parity could be negotiated with third party private payers and the state payers such as Medicaid. It should also be advocated for at the legislative level.

**Implications for Practice**

Despite the attrition rate, the data does reveal trends in the treatment of adolescent depression. The data confirm difficulty delivering care to a depressed population. The participants with the greatest amount of distress prior to beginning the intervention did not complete the intervention. This intervention was convenient for patients in that it was in a location they were familiar with and was offered during after school hours but the limited evening or after work hours may not have been convenient for families. The practice site was centrally located within the city and near a public transportation route. Despite the time and familiar location, there was an 80% attrition rate with three participants (30%) dropping out of the study due to transportation difficulties.

Of the participants who completed the intervention, one participant’s pre and post intervention PHQ-9 scores actually appear to have worsened during the course of
treatment. This could be explained, however, by the statistical concept of regression to the mean. If a variable is extreme on its first measurement, it will tend to be closer to the average on a second measurement. Another possible explanation, in the apparent worsening of scores is that the CBT intervention made her more aware of her feelings and therefore reported more distress post-intervention than pre-intervention. The other participant who completed the intervention had identical pre and post intervention PHQ-9 scores. Both participants who completed the intervention had similar pre and post YSR scores. Again, given the small sample size, additional statistical analysis is not possible.

The data from the two participants who completed the intervention possibly highlight a second problem in delivering care to depressed patients or any patient with a mental health diagnosis: measuring outcomes. In terms of translational research projects such as this, data were collected and presented in a quantitative format. Standardized formats such as the PHQ-9 and the YSR may not be the best data collection tools for this intervention. Perhaps the data should have been measured qualitatively, too. Another question to consider is when is it best to measure depression outcomes? In the review of the literature, outcomes were measured at varying times, including immediately following an intervention or perhaps six to twelve months following an intervention. While qualitative data collection or a different time frame for data collection may have revealed some trends or different outcomes, the challenge for healthcare providers remains the same. How and when do we best measure mental health outcomes?

This question will become more imperative as the Patient Protection and Affordable Care Act takes effect over the next two years. This legislation calls for the creation of Accountable Care Organizations to be responsible for the overall care of their
beneficiaries and share possible cost savings based on their practice innovations. This represents a shift in the risk from the insurer to the care provider. The legislation also calls for an innovation center within the Centers for Medicare and Medicaid Services to test and evaluate and expand different payment structures and methodologies to reduce program expenditures while maintaining or improving quality of care. Since patients with mental illnesses consume a greater proportion of health care resources, potential cost savings are likely with practice innovations such as the COPE curriculum or other primary care mental health interventions. The difficulty again lies with measuring these outcomes as the benefits will need to be demonstrated quantitatively and with rigorous research in the form of randomized controlled trials.

The problems with introducing evidence-based practice change within the walls of one pediatric practice also highlight and support the findings of the Institute of Medicine (IOM) and other agencies. These authors discuss the difficulties with and the time delay of translating research into practice. Provider resistance, high attrition, and questionable reimbursement will need to be overcome before the COPE curriculum within primary care can be an effective intervention.

From the personal experience of practice for the investigator, this project was both difficult and exciting at the same time. It marked the culmination of a course of doctoral study with a heavy emphasis in mental health and evidence-based practice. With twelve years of experience as a nurse practitioner, the investigator was very competent in delivering sick and well child care to a large age range of children. These appointment types are profitable from a practice management standpoint, however, their intellectual stimulation and resulting job satisfaction dwindles over time. The COPE curriculum
represented a new set of nurse practitioner skills with the potential to increase long term job satisfaction and career longevity. These types of practice innovations may prove satisfying to other practitioners. So in addition to patient outcomes and the financial reimbursement, satisfaction and longevity are important to consider given the projected future primary care provider shortage. The COPE curriculum project also provides an avenue for scholarship of practice for the investigator.

**Conceptual Frameworks**

This project employed the use of two conceptual frameworks to guide the intervention: Beck’s Cognitive Model which is represented in Figure 1 and the Chronic Care Model. Beck’s model proposes that how we think affects how we feel and how we behave. This concept is well represented in the COPE curriculum and is reviewed with the participant at each session. Most participants were quickly able to repeat verbally the think, feel, and behave relationship. Because only a small proportion completed the intervention, determining the effect on actual behavior in the short or long terms was impossible. Nevertheless, this model was extremely helpful in guiding the intervention.

The Chronic Care Model (CCM) was also employed. This model is an organizing framework for improving chronic illness care at both the patient and population level (Fiandt, 2007). The CCM is a way of organizing care delivery and often forms the foundation for models of care known as the Patient Centered Medical Home, as discussed previously. There are six elements to the CCM: organizational support, clinical information systems, delivery system design, decision support, self-management support, and community resources. These elements were not consistently available in the practice
site used for this intervention. The framework helps to identify how a practice innovation like this could be better facilitated.

Organizational support encompasses the culture of the patient care practice. Many difficulties with the culture of the practice blocked the support for this project. Clinical information systems to describe the health of the population and facilitate efficient and effective care were not available. The investigator was not granted access to the electronic health record used by three of the four providers in the practice because of the limited time on site. This access would have been helpful to document COPE sessions as office encounters that the referring provider would be able to see within the patient’s electronic health record. The access would also allow the investigator be to visualize the patient’s electronic health record for a summary of visits made to the practice for reasons other than COPE sessions to better understand their physical health. Depression screening is also a reimbursable CPT code. Building EHR procedure rules for conducting and documenting depression screening would increase practice revenue.

Delivery system design was a helpful component to this implementation as this concept encompasses the composition and function of the practice team, organization of visits, and management of follow-up care. Implementing the COPE curriculum involved changing the function of the practice team and the organization of visits for the clinical office staff to include universal depression screening using the PHQ-2 and PHQ-9 screens. It involved changing the function of the practice team and organization of visits for the providers as well. PHQ-9 screening tools needed to be scored and referrals made if depression was suspected. This process was not embraced by all practitioners at the practice site. Management of follow-up care was conducted by the investigator.
Decision support is also a helpful component of the CCM. Decision support includes mechanisms for increasing provider access to evidence-based guidelines and specialists for collaboration. The entire implementation was evidence-based. The practice of routinely screening all adolescents for depression regardless of reason for visit is an evidence-based guideline by the United States Preventive Services Task Force (2009). The COPE curriculum is also evidence-based as described by Lusk and Melnyk (2011a). The only aspect of this component not implemented was provider access to psychiatric specialists for collaboration. This would involve a system redesign such as the Massachusetts Child Psychiatry Access Project reviewed previously (Sarvet et al. 2010) which was beyond the scope of this project.

Self-management support is the fifth component of the CCM and this is foundational to cognitive-behavioral interventions. Manualized cognitive-behavioral interventions involve behavioral participation in the form of assigned homework and practice between sessions. This is one of the three critically important concepts also mentioned in the meta-analysis by McCarty and Weisz (2007).

Last, community resources were not involved. As mentioned previously, there is a lack of community resources for adolescent health. Also, as this intervention concluded in the summer, school based community resources were unavailable.

Studies that implement the CCM in primary care practices to manage chronic illnesses often employ a Registered Nurse (RN) care manager to assist with providing and tracking care or the use of an in-office care team. An example of this is the Asthma and Diabetes Quality Improvement Project reported by Silver et al. (2011). This project employed the CCM to improve management of asthma and diabetes using in-office care.
teams to coordinate and provide care management in the areas of delivery system design and clinical information systems. The staff at the clinics also received training in motivational interviewing to assist with self-management support. These efforts demonstrated improved care for both asthma and diabetes. When practices use in-office care teams and provide additional training for these teams, the cost is offset by pay-for-performance measures which increase reimbursement. This practice did not utilize this model of care for chronic illnesses such as diabetes, or asthma, or mental health diagnoses such as depression.

Roles of the Doctor of Nursing Practice

The American Association of Colleges of Nursing (AACN, 2006) and the National Organization of Nurse Practitioner Faculties (NONPF, 2006) have released documents describing the essentials for the education and future role of the Doctor Nursing Practice (DNP) degree. Chism’s (2011) book condenses the essentials from both organizations and includes recommendations from the Institute of Medicine (IOM, 2010) when she writes about five essential roles for the DNP advanced practice nurse graduate: clinician, leader, scholar, educator, and advocate.

Expert Clinician. Chism (2011) describes four attributes of an expert clinician: evidence-based practice, capacity to utilize information technology, interprofessional collaboration, and mentoring. Developing the skill set required to implement an intervention like the COPE intervention or any other primary care intervention for mental illness requires a set of skills beyond the traditional nurse practitioner skills. Traditionally nurse practitioners are taught about holistic care for their patients, but receive more education for pharmacologic than non-pharmacologic interventions, such as
the manualized cognitive behavioral therapy. It takes an expert clinician to critically appraise evidence, to conduct organizational assessments, to identify stakeholders and to lay the groundwork for a possible practice change. An expert clinician is also able to identify trends in practice that may require further treatment. For example, in this sample, the subgroup who attended one to four COPE sessions experienced distress in the area of sleep. Addressing patient symptoms that might interfere with getting treatment such as implementing sleep hygiene practices may improve other depression related treatments, such as the COPE intervention.

Additionally, an expert clinician may further examine the scoring of the PHQ-9. The participants with the highest PHQ-9 scores received the least intervention. In the case of this project, the COPE curriculum alone was a better intervention for participants with lower PHQ-9 screening scores. A DNP expert clinician is capable of devising a treatment algorithm where patients with somewhat lower PHQ-9 screening scores receive the COPE curriculum as monotherapy whereas those with higher PHQ-9 screening scores first receive assessment and treatment for core symptoms, such as sleep disruption, prior to beginning the COPE curriculum. Changing the recruitment in this way may lead to improved participant retention and therefore improved participant outcomes.

Interprofessional collaboration for this project implementation only involved collaborating with pediatricians. However, moving this project into the future, the investigator would need to collaborate with other professionals and further develop many of the roles within the Chronic Care Model. For example, the use of an RN care manager to help coordinate visits and manage any barriers to visits such as time and transportation. An RN care manager could also help track things like Emergency Department visits for
mental health complaints. Also necessary in moving this project forward would be to have a referral relationship with a psychologist and psychiatrist. This interprofessional collaboration would assist the nurse practitioner to implement an intervention beyond the traditional scope of primary care. The model of care for this could be similar to the co-location model. Developing this type of collaborative relationship would decrease barriers related to lack of communication between providers of care. This relationship would also benefit the nurse practitioner by providing support for manualized cognitive behavioral interventions and care for patients who are beyond the scope of practice of the pediatric nurse practitioner. Also, by a nurse practitioner doing an intervention like the COPE curriculum with a portion of the population who screens positive for depression but does not experience enough distress to be admitted to the hospital or is not actively suicidal, the psychologist and psychiatrist would be freer to see the patients with the greatest amount of distress.

While not applicable to this project implementation, the future of this project will involve the use of information technology. With this kind of intervention, information technology could be used to help identify eligible patients and track outcomes. For example, automated suggestions could populate the chart of potentially eligible patients reminding the clinical staff to screen the patient for depression. Screening or other depression related quantitative data could be retrieved from the databases to help measure outcomes. Demographic data could be easily retrieved. Using claims data and a RN care manager functioning within the Chronic Care Model, patients who have recurring chief complaints for somatic diagnoses such as fatigue, headaches, or stomachaches would be identified for depression screening and intervention if necessary. Similarly, RN care
managers can use claims data to identify patients at risk for depression by monitoring their patients’ Emergency Department and Urgent Care Center utilization and diagnoses.

**Leader.** According to Chism (2011) this essential encompasses leadership, which she defines as, “the art and science of influencing a group toward achievement of a goal” and collaboration (p.37). The AACN (2006) further discusses this by writing that an effective leader will, “manage patient safety issues, eliminate health disparities, and promote excellence in practice by evaluating evidence-based practices for healthcare delivery. Further, DNP graduates must become proficient at quality improvement strategies that improve patient outcomes at every level in healthcare delivery” (p. 36).

The implementation of the COPE project involved these leadership qualities such as evaluating evidence-based practices for healthcare delivery. It also helped eliminate health disparities by offering a treatment option to those who did not have other options. However, in looking at the future, making this project more successful will require leadership skills to influence groups of providers, payers or patients toward improved mental health outcomes.

The Institute of Medicine (2010) recognizes the leadership potential of nurses when they call on the Center for Medicare and Medicaid Innovation, a part of the Affordable Care Act, to utilize nursing leadership and management in collaborative efforts with physicians and other members of the health care team. These efforts could encompass research and the redesign and improvement of practice environments and health systems. The COPE curriculum project is an excellent example of nursing leadership redesigning and improving practice.
However, this experience provided challenges to nursing leadership. Resistance from providers and patients is a real world scenario. Change is difficult for providers who are comfortable in their practice and overwhelmed with the daily tasks of providing care to a large number of patients. Change is difficult for patients who struggle with sleep difficulties, feelings of hopelessness, time and transportation issues, and less than ideal social situations. For this reason, Chism’s (2011) use of the phrase “art and science” with regard to nursing leadership rings very true (p. 37). This project was laid out in a very scientific manner as the evidence was evaluated, the stakeholders were identified, and the practice site was selected. The art of leadership was not as carefully considered. In hindsight developing working relationships early in the process or conducting exploratory meetings with resistant providers to hear their concerns and possible solutions regarding the problem of adolescent depression may have changed the outcome.

Leadership is also a skill that grows with time and with challenges. As a novice to practice innovation, the author learned about personal strengths and weaknesses in leadership when difficulties were encountered.

**Scholar.** A DNP scholar “undertakes rigorous inquiry that is significant to the profession of nursing, [and is] a professional whose work can be documented, replicated, or elaborated upon, and can be peer-reviewed through various methods” (Chism, 2011, p. 56). A DNP degree is not a research degree, but a practice degree. The practice doctorate leads the graduate to approach practice problems, such as difficulty delivering care to depressed adolescents in a scholarly manner. The DNP degree is crucial with the passing and implementation of the Affordable Care Act as there is a need for both practice expertise and research expertise to solve the problem of measuring mental health
outcomes. Chism (2011) and other authors write of the formation of PhD and DNP research teams to work collaboratively and as co-investigators in these types of projects. Scholarship is also essential in disseminating the results of translational research projects, such as this one, to advance nursing practice and the quality of patient care, as well as to inform others attempting to implement a similar project. The results need to be disseminated to disciplines inside and outside of nursing such as mental health professionals, policy makers, pediatric and family practice physicians, and consultants in medical home and Accountable Care Organizations.

**Educator.** The AACN (2006) defines this role as filling the need for both nurse practice experts and nurse scientist to expand the scientific base for patient care. Doctoral education in nursing is designed to prepare nurses for the highest level of leadership in practice and scientific inquiry. This role can be implemented in traditional educational settings, such as colleges or universities. However, in this case, the role involves serving as an educator to families, patients, clinical and clerical staff, and other healthcare professionals. Given the breadth of publications available, no one provider is able to keep abreast of every possible change and practice innovation. A DNP serving in an educator role with this body of literature can help keep other providers informed of treatment possibilities. In working with patients and families, the DNP graduate can provide hope by using the evidence that demonstrates treatment successes with interventions such as COPE. In collaboration with other health professionals, the investigator in an educator role can discuss this project implementation and use the discussion as a platform to brainstorm future interventions.
**Health Policy and Advocacy.** Chism (2011) and the AACN (2006) describe a DNP advocate when they write of a professional who can analyze health policy proposals and related issues from a variety of perspectives, demonstrate leadership in the development and implementation of health policies, influence policy makers, and advocate for the nursing profession. While advocacy is often considered in a larger legislative arena, being a practice level advocate for patients who struggle with mental illness is imperative. The research tells us these patients are more likely to be of lower socioeconomic status and more likely to be a racial minority. It is a major principle within the practice philosophy of the investigator that these patients are given a voice in a complex health care system. This advocacy role becomes very important given the potential for decreased reimbursement for mental health interventions within primary care. While working on and awaiting reimbursement parity, it is in the best interest of all stakeholders to get help for adolescent patients struggling with depression. Depending on the practice environment, implementing a new intervention in the face of decreased reimbursement may be difficult. Given the scope of the problem, depressed adolescents need patient advocates to help them receive necessary and essential care.

Health policy and advocacy does need to occur in the larger legislative picture also. Lack of parity for reimbursement for mental health versus physical health diagnoses may threaten the future of interventions despite the potential cost savings of the interventions. The future of this and other projects similar to it must include nursing in the development of Accountable Care Organizations which will manage risk and share profits and loss for patient populations. Nursing must be prepared to share data regarding
the scope of the problem of adolescent depression as well as contribute to the discussions about solutions with all stakeholders.

**Limitations**

This project tested the external validity of previous work by Lusk and Melnyk (2011a) who implemented the COPE curriculum within a community mental health clinic during the evening hours. Their project did not involve implementing a screening process as patients were screened elsewhere and then referred. Implementing a mental health project within a mental health setting may explain the lack of patient attrition also. Within mental health settings, patients expect mental health interventions.

Sample size is a difficult limitation in this project. Ideally 25-30 patients would have been recruited and finished the intervention. The opportunity to provide the intervention to this number of adolescents would have enhanced the DNP investigator’s skill. This size sample would have allowed the use of parametric data to better assess outcomes. The practice site was also a limitation in this project. There was a lack of cooperation among providers and the departure of referring providers during the course of this project. The investigator lacked professional credibility among the providers and patients at the practice site, likely influencing referrals and patient retention.

**Recommendations for Change**

To further advance the treatment of adolescent depression and nursing knowledge, this work must be replicated within different primary care settings. Prior to implementation, however, it would be essential for the investigator to conduct a thorough organizational assessment. This would help identify problems between providers and assess level of commitment to evidence-based practice change in the organization. If the
investigator is not a member of the practice, it would be essential that he or she spends time within the organization developing professional credibility. The organizational assessment would help guide the investigator about how to achieve this. Evidence-based interventions such as COPE may be initiated by someone who is a fully integrated member of a practice or supported in a fully-functioning student role.

Private practice interventions such as this one also should not be carried out without the use of the electronic health record. The electronic health record is the way of the future and will soon be mandatory for practices. Fully harnessing information technology with this project would involve documenting depression screening information so it is retrievable, further identifying individuals for whom somatic complaints indicate need, documenting progress in the COPE curriculum within the electronic health record so all providers could see it, and using the data within the record to justify the CPT codes used for billing.

**Conclusion**

Adolescent depression is a growing problem in the United States that presents many treatment difficulties. Models of care such as Beck’s Cognitive Model and the Chronic Care Model help provide a framework to approach this problem. The use of a manualized cognitive behavioral intervention delivered within pediatric primary care has the potential to provide a partial solution to this difficult problem. Challenges in the area of recruitment, attrition, and reimbursement exist. Measuring outcomes is also a challenge. DNP education shifts the focus of practice innovation from Microsystems of care to Macrosystems of care. This focus on larger issues of systems that impact care such as the Chronic Care Model and pay-for-performance measures informs future
interventions for the complex problem of adolescent depression. The DNP prepared pediatric nurse practitioner is required to use new skills such as those of expert clinician, advocate, educator, scholar, and leader as interventions for adolescent depression move forward.
APPENDIX A

Permission to Use Beck’s Cognitive Model
Permission is hereby granted for the use requested.

Any third party material is expressly excluded from this permission. If any of the material you wish to use appears within our work with credit to another source, authorization from that source must be obtained.

This permission does not include the right for the publisher of the new work to grant others permission to photocopy or otherwise reproduce this material except for versions made by non-profit organizations for use by the blind or handicapped persons.

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APPENDIX B

Institutional Review Board Approval Letter
DATE: February 22, 2012

TO: Jaclynn Lubbers, DNP
FROM: Grand Valley State University Human Research Review Committee
STUDY TITLE: [253655-2] Meeting Teens Where They Are: The feasibility of a cognitive behavioral intervention for depressed adolescents in pediatric primary care
REFERENCE #: 12-102-H
SUBMISSION TYPE: Amendment/Modification
ACTION: APPROVED
APPROVAL DATE: February 22, 2012
EXPIRATION DATE: February 22, 2013
REVIEW TYPE: Expedited Review

Thank you for your submission of materials for this research study. The Human Research Review Committee has approved your research plan application as compliant with all applicable sections of the federal regulations, Michigan law, GVSU policies and HRRC procedures. All research must be conducted in accordance with this approved submission.

This approval is based on no greater than minimal risk to research participants. This study has received expedited review, category 2-7 based on the Office of Human Research Protections 1998 Guidance on Expedited Review Categories.

Please insert the following sentence into your information/consent documents as appropriate. All project materials produced for participants or the public must contain this information.

This research protocol has been approved by the Human Research Review Committee at Grand Valley State University. File No. 12-102-H Expiration: February 22, 2013.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note the following in order to comply with federal regulations and HRRC policy:

1. Any revision to previously approved materials must be approved by this office prior to initiation. Please use the Change in Protocol forms for this procedure. This includes, but is not limited to, changes in key personnel, study location, participant selection process, etc.

2. All UNEXPECTED PROBLEMS and SERIOUS ADVERSE EVENTS to participants or other parties affected by the research must be reported to this office within two days of the event occurrence. Please use the U/P/SAE Report form. All instances of non-compliance or complaints regarding this study must be reported to this office in a timely manner. There are no specific forms for this report type.

- 1 -
The Patient Health Questionnaire (PHQ-9)

<table>
<thead>
<tr>
<th>Over the past 2 weeks, how often have you been bothered by any of the following problems?</th>
<th>Not At all</th>
<th>Several Days</th>
<th>More Than Half the Days</th>
<th>Nearly Every Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling asleep, staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself - or that you’re a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed. Or, the opposite - being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

| Column Totals |  +  +  +  |
| Add Totals Together |  |

10. If you checked off any problems, how difficult have those problems made it for you to do your work, take care of things at home, or get along with other people?

- [ ] Not difficult at all
- [ ] Somewhat difficult
- [ ] Very difficult
- [ ] Extremely difficult
APPENDIX D

Permission to Use the Youth Client Satisfaction Questionnaire
Dear Jaclynn,

I can't do any better than your lit rev in knowing who used the instrument in outcome research. I've sent it to people who said they were going to do that, but I haven't kept track of what came of their work.

You can consider this email documentation of my permission to use the instrument, altho such permission isn't really necessary because no one owns it. There's no money involved; the instrument is just out there.

Again, good luck with your research.

Jeremy Shapiro
APPENDIX E

Youth Client Satisfaction Questionnaire
Youth Client Satisfaction Questionnaire (YCSQ)

You can put your name
here if you want to:__________________________

Therapist name:______________________________

Age: _____ Sex: ☐ Male ☐ Female

Ethnic group: ☐ African American
☐ Hispanic
☐ White
☐ Other

These questions are for young people who have finished counseling or therapy. The reason for the questionnaire is that we want to know if people liked the counseling they got, and we want to know what they liked about it and what they didn’t like.

These questions don’t have right or wrong answers. If you didn’t like your counseling, tell us that, and if you liked it, say that. Some people like their counseling and some people don’t, and some people partly like it and partly don’t like it. We want to know what you think.

You give your answer by marking the box under the words that say what you think, like this:

Example: Are you over the age of 19?

No ☐ Yes ☐

1. Did you have a bad time in counseling, or did you have a good time?

Very bad ☐ Bad ☐ Good ☐ Very good ☐

2. Did you understand what your goals were in counseling?

Didn’t understand at all ☐ Understood a little ☐ Understood pretty well ☐ Understood everything ☐

3. Did you like your counselor?

Didn’t like at all ☐ Liked a little ☐ Liked some ☐ Liked a lot ☐
4. Did your counselor care about you?
   Didn't care at all  ☐  Cared a little  ☐  Cared some  ☐  Cared a lot  ☐

5. Did your counselor understand you?
   Didn't understand at all  ☐  Understood a little  ☐  Understood some  ☐  Understood a lot  ☐

6. Did your counselor understand the kind of people in your family and neighborhood?
   Didn't understand at all  ☐  Understood a little  ☐  Understood some  ☐  Understood a lot  ☐

7. Did your counselor have good ideas that helped you?
   No good ideas  ☐  A few good ideas  ☐  Some good ideas  ☐  A lot of good ideas  ☐

8. Did you learn things that helped you in counseling?
   Didn't learn anything  ☐  Learned a little  ☐  Learned some  ☐  Learned a lot  ☐

9. Do you feel differently now because of counseling?
   Feel worse  ☐  Feel the same  ☐  Feel better  ☐  Feel a lot better  ☐

10. Do you act differently now because of counseling?
    Act worse  ☐  Act the same  ☐  Act better  ☐  Act a lot better  ☐
11. Did counseling change the way you feel about yourself?

Feel worse about myself □
Feel the same about myself □
Feel better about myself □
Feel a lot better about myself □

12. Did counseling change the way you get along with your family?

Get along worse □
Get along the same □
Get along better □
Get along a lot better □

13. Did counseling help your problems get better?

Problems got worse □
Problems are the same □
Problems got better □
Problems got a lot better □

14. All in all, how do you feel about your counseling?

Wish I never went □
Not sure □
Glad I went □
Very glad I went □

Now we have some questions for you to answer by explaining things to us.

What was the best thing about counseling for you? What was the best thing your counselor did?

What was the worst thing about counseling for you? What did your counselor do that wasn't helpful for you?

Any additional comments:
APPENDIX F

Provider Satisfaction Questionnaire
Provider Satisfaction Questionnaire

Please take a moment to fill out the following questionnaire regarding your thoughts about the COPE implementation within your practice.

Your responses are anonymous and will be very helpful in guiding future interventions.

Thank you in advance for your time.

1. Do you feel the COPE curriculum is a feasible intervention within a primary care office?
   1. Strongly disagree
   2. Disagree
   3. Neither disagree or agree
   4. Agree
   5. Strongly agree

   Please provide additional comments:

2. I observed benefits of the COPE intervention among my patients who were participating in the program.
   1. Strongly disagree
   2. Disagree
   3. Neither disagree or agree
   4. Agree
   5. Strongly agree

   Please provide additional comments:

3. I am satisfied with the ability of a pediatric nurse practitioner to provide a cognitive-behavioral intervention within pediatric primary care for depressed adolescents.
   1. Strongly disagree
   2. Disagree
   3. Neither disagree or agree
   4. Agree
   5. Strongly agree

   Please provide additional comments:
4. Please use this space to provide any feedback you think would be helpful in planning future interventions.
APPENDIX G

Script, Consent and Assent Forms
Script for talking with parents and teens about the COPE program

You are being asked to come in today to discuss your teen’s recent scores on the depression screening tool the Patient Health Questionnaire-9. Your teen scored ____ on the questionnaire. A score of greater than or equal to eleven suggests your teen may be struggling with some symptoms of depression.

You are not alone! Depression is common among teenagers, some people think as many as 20% of teens will test positive for depression during their teenage years.

I, the nurse practitioners, and the pediatricians at XXXXXXX XXXXXX know that recognizing and treating depression is important. Teenage depression is associated with increased risk for substance abuse, poor school performance, difficulties in relationships with friends and at home, and even suicide.

Everyone’s symptoms of and experience with depression is unique. For some people, they may feel sad or down or as though they have nothing to look forward to or others may describe you as irritable. Others will lose interest in things that were once fun to them (for example: you may have loved to go to the mall with your friends, and now it doesn’t sound like fun anymore). Still others will have difficulty concentrating, difficulty sleeping or staying awake, increased or decreased appetite, or physical complaints, like stomach aches that are very much real but do not have a physical cause. Last, you may have low energy or feelings of worthlessness.

It is difficult to really accurately say what causes depression. Certainly it runs in families or is genetic, so if one or more of your immediate family members struggle with depression or anxiety, you are at risk to also struggle. We also know that females, those who live in poverty and those who are Hispanic or African American are more likely to struggle with depression. People with depression may have an imbalance of the chemicals or neurotransmitters in our brains too. Last, people with depression may have a distorted or inaccurate view of the world, themselves and the future. This causes people to think about themselves the world and the future negatively and to interpret events negatively. This is called the cognitive theory of depression.

The good news is that there are a lot of things that can be done to help teenagers who struggle with depression. The therapies for depression can be grouped into two categories. The first is medication. The most common form of medication for teenagers with depression is a class of medications called the selective serotonin reuptake inhibitors (SSRIs). These medications have been studied in teenagers and are effective. Medications target the neurotransmitters in our brains to help improve the symptoms of depression. If your nurse practitioner or pediatrician feels you may benefit from medication they may have discussed this with you. Or if you are wondering about whether medication treatment is appropriate for you, I encourage you to make an appointment with the provider in this office with whom you are the most comfortable to discuss this further.
The second category is referred to as counseling or psychotherapy. You may have heard this referred to as, “Going to counseling” or “Seeing a therapist.” The most studied and supported therapy for adolescent depression is Cognitive Behavioral Therapy or CBT. This type of treatment challenges the way we think about what happens in our daily lives. This treatment is also available to you. There are several providers in the community, ranging from Social Workers to Psychologists who are well qualified to provide this care to adolescents. Whom you see and where you go for this will depend on your insurance and your preferences for treatment. For example, if you would rather see a male or female, would rather see someone another family member has seen, or any other preference. If this interests you, the staff at XXXXXXX XXXXX can help you identify the appropriate providers in the community.

Because it is sometimes scary to go for counseling, or expensive, or difficult to get there, the providers at XXXXXXX XXXXX are offering you the opportunity to be a part of a project through Grand Valley State University. This project looks at having an experienced pediatric nurse practitioner, me, work with you through a CBT course within this office. This approach has worked well for adolescents with depression in other settings. This would involve seven 30-minute weekly sessions working through a workbook with me to identify negative thoughts, feelings or behaviors that may contribute to depression symptoms in you. Because this is a study, this option involves no cost, but there is also no financial reward to you to participate. If this interests you, I can provide you with further information.

Regardless of which treatment option you choose the providers at XXXXX XXXXX and I want to encourage you to seek help so you can be the healthiest you can be.
COPE Parental Consent

Creating Opportunities for Personal Empowerment

Introduction:

The purposes of this form are to provide information that may affect decisions regarding your teen’s participation in the COPE (Creating Opportunities for Personal Empowerment) program and research study and to record the consent of those who are willing to have their teen participate in this program and study.

Project Investigator:

Jaclynn Lubbers, Pediatric Nurse Practitioner will be the researcher for this project. As a doctoral student at Grand Valley State University, I will be supervised by Andrea Bostrom, PhD, PMHCNS-BC. We have requested your minor child’s participation in this research study and program.

Description of the program:

If you allow your teen to participate in this study, your teen will participate in the COPE program sessions during 7 regularly scheduled outpatient clinic appointments. As part of our assessment of adolescents, your teen will be asked to fill out some questionnaires on teen beliefs and moods (e.g., Depression) before the COPE sessions are conducted. The scores of these questionnaires will be a part of the study, but will not have your teen’s name attached. The key that connects the teen’s name and corresponding code number will be kept separate from the questionnaires and only accessible to the researcher. Upon completion of this study, any documents that identify teens will be destroyed. We expect it will take approximately 45 minutes each time your teen fills out the questionnaires. Some of the questions may be sensitive for your teen to answer. If he or she is uncomfortable with any questions, your teen is free not to answer the question. If it is determined after filling out the questionnaires that your teen is at risk for self-harm or a depression related injury, a referral for a Mental Health Evaluation will be made.

The information in the COPE program will be given to your teen each week for 7 weeks, during regularly schedule 30 minute outpatient appointments.

Your teen will be asked to fill out the same questionnaires again after he or she completes the COPE sessions.

Exclusionary criteria:
In order for your teen to participate in COPE he or she must be a patient at this practice site. He or she must also be able to read, write, and understand the written and orally communicated materials the program contains.

Risks:

Although none of the questionnaires ask your teen about child abuse or neglect, as a nurse I am required by the state of Michigan to report any suspected or actual child abuse or neglect.

The greatest risks are your time to complete the questionnaires and participate in the COPE program. There are other potential risks that I need to describe. Whenever a new or additional therapy is introduced, there is potential for psychological distress. This will be monitored regularly and additional treatment referrals made if necessary. This may affect your contribution to the study and will be decided on a case by case basis.

There is also a potential risk associated with the release of confidential information. Every effort will be made to assure sensitive personal information is kept confidential. All data will be kept in a locked file in the investigators’ locked office. Once the study is complete the collected information will be shredded in the clinics’ secure shredding process.

Benefits:

Whenever a new or additional therapy is introduced there is potential for benefit. This program has been used by other teens in other settings with demonstrated benefit. Another benefit is that you will contribute to the literature for identifying useful interventions for other teens experiencing depression.

New Information:

You will be contacted if new information is discovered that would reasonably change your decision about your teen’s participation in the COPE program.

Confidentiality:

The results of the research study may be published in aggregate, but your teen’s name or identity will not be revealed. In order to maintain confidentiality of your teen’s records, every effort will be made to keep the information learned from him or her private.

You will be asked to sign release of information forms, which are HIPAA and XXXXXX XXXXX approved, to allow me to read your teen’s medical record (chart) for research purposes.
To meet regulations or for reasons related to this program, I, or my supervisor may share a copy of this consent form that identifies you with the following people: the Grand Valley State University Institutional Review Board.

Withdrawal Privilege:

If you choose not to have your teen participate or to withdraw your teen from the program at any time, there will be no penalty. It will not affect your teen’s status or care in this office. Likewise, if your teen chooses not to participate or to withdraw from the program at any time there will be no penalty.

Costs and payments:

There are no costs to you for participating in the COPE program.

Compensation for illness and injury:

Agreeing to your teen’s participation does not waive any of your legal rights. However, in the event of harm arising from this study, neither Grand Valley State University nor the nurse practitioner/supervisor are able to give you any money, insurance coverage, free medical care, or compensation.

Voluntary Consent:

By signing this form, you are saying: 1) that you have read this form or have had it read to you, and 2) that you are satisfied you understand this form, the research study, and its risks and benefits. The nurse practitioner will be happy to answer any questions you have about the COPE program.

If you have questions about your rights, or if you feel your teen has been placed at risk, you can contact the chair of the Human Subjects Institutional Review Board, through Grand Valley State University at 616-331-3197.

Please read, fill out, and sign these pages if you are agreeing to have your teen participate in the COPE program and research study.

Parental Permission

I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give permission for my teenager to participate in the COPE program/research study. (A copy of this form will be given to you for your records).

Your teenager’s first and last name (please print): _____________________________
Your name (please print): _________________________________________________
Your signature: _________________________________________________________
Date: _________________________________________________________________
Investigator’s Signature: ________________________________________________
Witness: _______________________________________________________________
COPE Teen Assent Form

Creating Opportunities for Personal Empowerment

We are asking you to take part in a research study that will look at whether taking part in the COPE program, a 7 week life-skills building course using a workbook, can help you to deal with stress and feelings of sadness and depression. If you agree to participate in this study, you will be asked by the researcher to fill out surveys (written sets of questions) about your thoughts and mood at two different times. The first is before the COPE program begins and the second is after the 7 sessions of COPE are complete. The survey scores will be coded, so no one will know which scores are yours. Each time you fill out the survey, it will take approximately 45 minutes. Some of the questions of the survey may be sensitive to you. If you are uncomfortable answering a question, then it is OK to leave the answer blank.

You do not have to be in this study. No one will be mad at you if you decide not to participate. Even if you start the COPE program you can stop later if you want. You may ask questions about the program at any time.

If you decide to be in the study, we will not tell anyone else how you answer the surveys or what you say in the sessions. I will give the referring doctor or nurse practitioner at this practice site brief updates about your progress through the COPE curriculum. If you report symptoms of severe depression or are at risk for suicide, your parents will need to be called immediately. Although none of the questionnaires specifically ask about child abuse or neglect, as a nurse I am required by the state of Michigan to report any suspected or actual child abuse or neglect.

If you sign this form, it means that you have read this form and are willing to be in this COPE program and study. If you have questions about your rights as a participant in this study or if you think you have been placed at risk, you can contact the Chair of the Human Subject Institutional Review Board at Grand Valley State University at 616-331-3197.

Printed first and last name: _______________________________________________

Signature:  _____________________________________________________________

Date:  _________________________________________________________________

Investigator’s Signature:  ________________________________________________

Witness:  _______________________________________________________________
APPENDIX H

Frequently Asked Questions on Child and Adolescent Depression
# FAQs on Child and Adolescent Depression

## What causes depression in children?

Depression has no single cause. Both genetics and the environment play a role, and some children may be more likely to become depressed. Depression in children can be triggered by a medical illness, a stressful situation, or the loss of an important person. Children with behavior problems or anxiety also are more likely to get depressed. Sometimes, it can be hard to identify any triggering event.

## What are the signs and symptoms of depression?

Common symptoms of depression in children and adolescents include those listed below. In “major depression,” five or more of these symptoms last for over two weeks, and cause difficulty in everyday life. In a less severe but longer lasting condition called “dysthymia,” two or more of these symptoms are present, more often than not, for a year.

- Feeling or appearing depressed, sad, tearful or irritable
- Decreased interest in or pleasure from activities, which may lead to withdrawal from friends or after-school activities
- Change in appetite, with associated weight
- Major changes in sleeping patterns, such as sleeping much more or less than normal
- Appearing to be physically sped up or slowed down
- Increase in tiredness and fatigue, or decrease in energy
- Feeling worthless or guilty
- Difficulty thinking or concentrating, which may correlate with worsening school performance
- Thoughts or expressions of suicide or self-destructive behavior

In children it is important to keep in mind that an increase in irritability or even complaints of boredom may be more noticeable than sadness. Children also may have more physical complaints, particularly if the child does not have the habit of talking about how he or she feels. Talk of suicide or not wanting to be alive can be difficult to interpret, so it must be taken seriously and brought immediately to a doctor’s attention.

## Will depression improve without treatment?

Different types of depression have different patterns of improvement. Dysthymia tends to be less severe but longer lasting. Major depression may improve by itself, but if left untreated, it can be very severe. When they are depressed, children may lose friends and family members, and fall behind at school. Depressed children are more likely to try drugs or get into other trouble. What’s worse, untreated depression can progress lead youth to think about suicide. It is also important to note that, once someone has one episode of depression, they are more likely to get depressed in the future.

## What should treatment consist of?

When possible, treatment for depression childhood depression should include both psychotherapy and medication. In milder forms of depression, it is reasonable to start with a psychotherapy, but treatment with a medication and psychotherapy should be considered for
Does psychotherapy work? How?

Several types of therapy can be used to help depressed children. Below are some examples of how they work.

- **Individual Therapy** - Several types of therapy have been proven to be effective in depressed youth. The individual therapies with the most evidence are Cognitive Behavior Therapy (CBT) and Interpersonal Therapy (IPT).

CBT helps improve a child’s mood, by changing unhealthy patterns of thinking. CBT therapists teach children that thoughts cause feelings and moods which can affect behavior. During CBT, a child learns to “see” harmful thought patterns. The therapist then helps the child replace this thinking with thoughts that result in better feelings and behaviors.

IPT helps improve mood by improving interpersonal relationships. IPT therapists help depressed children identify “interpersonal events,” and how these events affect their relationships, their moods and their lives. Through exercises such as talking and role play, problem relationships are more fully understood and addressed.

- **Family Therapy** focuses on helping the family function in more positive and constructive ways by looking at patterns of communication and providing support and education. Sometimes family therapy uses CBT and IPT principles described above. Family therapy sessions can include the child or adolescent along with parents, siblings, and grandparents.

- **Group Therapy** is a form of psychotherapy where there are multiple patients led by one or more therapists. It uses the power of education and how people interact in a group to improve our understanding of and recovery from depression.

Are medications safe? Do they increase risk of suicide?

When prescribed and monitored carefully, medications are both safe and effective ways to treat depressed youth. Fluoxetine or Prozac, a selective serotonin reuptake inhibitor, is the medicine that so far has proved most safe and effective. There are times, however, when other medications can and should be used.

While medications have been associated with a small increase in thoughts of suicide, there is no evidence that antidepressants actually increase the risk of suicide. For moderate to severe depression, the potential benefits from medication treatment seem to outweigh the potential risks. [Click here for a complete discussion of the use of medication in childhood depression.](#)
References


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