EVALUATING THE EFFECT OF AN EMPIRICALLY-SUPPORTED GROUP INTERVENTION FOR STUDENTS AT-RISK FOR DEPRESSION IN A RURAL SCHOOL DISTRICT

A dissertation submitted to the
Kent State University College and Graduate School
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By

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The purpose of this study was to evaluate and explore a preventative school-based mental health intervention targeting students at-risk for depression. The research design was a pre-test post-test treatment as usual group design with random assignment of a convenient group of 22 participants to one of two groups: (a) the experimental group who received a modified version of the Adolescent Coping with Depression Course (CWD-A; Clarke, Lewinsohn, & Hops, 1990) or (b) an intervention typical for targeted students in the school setting. Both the experimental group and the treatment as usual group made progress, and the groups did not increase their symptoms associated with depression. Moreover, the findings demonstrated that over time the students who participated in the CWD-A curriculum had more clinically significant outcomes in comparison to the treatment as usual group. This study added to the depression prevention literature by further exploring the CWD-A curriculum, maintaining cost effectiveness, and focusing on group interventions rather than individual therapy for a convenient sample of students in a school-based setting who were at-risk for depression. However, further research is needed to make stronger conclusions that continue to contribute to the literature.
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CHAPTER I
INTRODUCTION

Background Information

Approximately one in five children and adolescents (20%) has a mental disorder, and major depressive disorder (MDD) has been the leading cause for youths’ mental health problems in the United States (American Academy of Pediatrics, 2004; Substance Abuse and Mental Health Services Administration [SAMHSA], 2008; World Health Organization [WHO], 2001). Some researchers argue that society has not made internalizing problems in children, such as depression, a global or even a national public health priority; others have believed that mental health concerns have increased minimally in importance during the last 20 years (Herman, Merrell, Reinke, & Tucker, 2004; Horowitz & Garber, 2006; National Institute of Mental Health [NIMH], 2008). The No Child Left Behind (NCLB) legislation has been evidence of the slow maturation of school-based mental health initiatives. Although the legislation included components to advance school-based mental health, little progress in the school-based mental health movement has occurred because of the complexity of the provisions in NCLB (Daly et al., 2006; NCLB, 2001). For example, stakeholders, teachers, and mental health professionals have struggled to understand provisions about accountability for student performance, funding issues, community awareness, and provisions about teacher’s role in school-based mental health initiatives (Daly et al.).

With approximately 21% of children and adolescents in need of mental health services, the lack of mental health support for youth has been profoundly evident (Burns
et al., 1995; National Advisory Mental Health Council Workgroup on Child and Adolescent Mental Health Intervention Development and Employment [NAMHC], 2001; U.S. Department of Health and Human Services [DHHS], 1999). With regard to access to services, 20% of children have had severe social-emotional disorders and have not received mental health services (Burns, 1999; National Association of School Psychologists [NASP], 2008). Thus, the prevention of social-emotional disorders, such as MDD, is drastically important given this large percentage. The Surgeon General’s 2004 report on mental health advocated for prevention and voiced concern for the slow maturation of preventative mental health (Public Health Service, 2004).

**Prevention**

In 1996, the United States government asserted that prevention in mental health was a priority and researchers echoed similar needs in the literature (Munoz, Mrazek, & Haggerty, 1996). In 1998, the National Advisory on Mental Health (NAMH) operationalized a definition for prevention as, “seeking to understand and influence the developmental trajectory from the earliest formation of the nervous system throughout the course of life in order to prevent mental disorders and promote mental health” (p. 17). Later, Gillham (2000) proposed that the term prevention refers to programs that contribute to decreasing symptoms that would otherwise be expected. Additionally, in 2004, Herman et al. asserted that school psychologists are the key in developing preventative mental health interventions because of their role and their access to the school environment. Bramlett, Murphy, Johnson, Wallingsford, and Hall (2002) voiced an analogous opinion when they investigated the role of the school psychologist. Some of the barriers Herman et al. discussed to prevention of depression in the schools were:
(a) inconsistent findings for depression prevention, (b) limited transportability and/or cost effectiveness, (c) sociocultural aspects of depression, and (d) focus on individual interventions.

**School-Based Mental Health**

According to the Condition of Education 2008, a congressionally mandated report, public school enrollment is projected to climb over the next ten years and to reach at least 54.1 million students. This means significant educational issues, such as underachievement, disproportionality, over identification, and school violence, will also continue to climb. Mental health concerns are likely to increase as the student population expands. A range of concerns are likely to be more significant, including peer conflicts, family stress, internalizing and externalizing difficulties, social challenges, and transitions and adjustments. Strein, Hoagwood, and Cohn (2003) asserted that major issues like these may be best addressed by changing the system of delivery.

One way to change the system of delivery is through school-based mental health services that craft an avenue to provide services to children that would otherwise go unrecognized and would otherwise progress without receiving mental health services. School-based mental health provides an opportunity not only for diagnosis and treatment for approximately 10.82 million children but also provides opportunities for prevention for many more children and adolescents. One study in North Carolina showed that only 40% of children who are diagnosed with a Social-Emotional Disorder (ED) receive some type of mental health service in the schools across one academic year (Burns, 1999). Thus, school districts have the opportunity to provide mental health services to many children in need of support by expanding their mental health programs. The concept of
schools serving as a primary environment for delivery of mental health services is not new. Researchers have been publishing on school-based mental health for decades. For example, Adelman began exploring school-based mental health in the 1980s and continues to contribute to this body of literature. Weist has gained significant experience in the field with school-based mental health and has expanded these experiences into research studies.

Some authors, including Adelman and Weist, have recommended different models for delivering school-based mental health models. Adelman and Taylor, who co-direct the School Mental Health Project (SMHP) and the National Center for Mental Health in Schools (NCMHS; 2010), developed the Interconnected Systems. The SMHP was designed in 1986 to encourage theory, research, practice, and training in school-based mental health. In 1995, the NCMHS was established as a result of the work of the SMHP. The website devoted to SMHP and NCMHS is designed to facilitate collaboration and information dissemination on school-based mental health. Adelman and Taylor’s (2000a; 2000b) Interconnected Systems model is based on a continuum of services that incorporate the school and community. These services span from public health protection/promotion and preschool-age programs (i.e., quality day care and early childhood education) to intervention implementation for students at-risk (i.e., mobile therapy and group interventions) and intensive treatment (i.e., individual therapy, special education, and rehabilitative programs). In their model, Adelman and Taylor (2000b) note three themes: (a) transition from “fragmentation” to “cohesive intervention”, (b) move from “narrow focus, problem-specific and specialist oriented services to
comprehensive general programmatic approaches,” and (c) emphasis on research-based interventions with “high standards” and “accountability (p. 51).

Another lead researcher in the field of school-based mental health is Dr. Mark Weist. Weist is the director of the Center for School Mental Health (CSMH) and participates in the School Mental Health Program (SMHP) with Baltimore City School District. The goal of CSMH is to promote expansion and improvement of mental health services in the schools. The SMHP includes assessment, treatment, and prevention services to 25 elementary, middle, and high schools in Baltimore City School District. The goal of SMHP is to provide students and families a continuum of effective mental health promotion and intervention services.

Weist has published extensively on school-based mental health. Recently, Weist and his colleagues published an article describing his work with Baltimore City School District and the model that he and his colleges have implemented in the schools (2010). Weist et al.’s (2010) model is a triangular model with four tiers in which the first tier includes the school environment and relationship enhancement. This tier includes the entire learning community (parents/caregivers, community members, school staff, etc.). The second tier is for universal prevention, which are services delivered to all students (i.e., Paths to Pax). The third tier is for selective prevention. This tier is for students that present specific risk factors. Services are delivered via group therapy. Finally, the fourth tier is for indicated prevention or prevention services directed at individual students.

Brener, Weist, Adelman, Taylor, and Vernon-Smiley (2007) explored the state of school-based mental health in the United States. They found that 77.9% of schools had at least a part-time counselor and fewer schools had psychologists and social workers. As a
result of their findings, they called for a need to enhance school-based mental health services and build state agendas for school-based mental health. Weist et al. (2010) called for an increase in evidence-based preventive interventions in the schools and he encourages researchers to enhance the linkage between School Based Mental Health, prevention, and science.

Christner, Forrest, Morley, and Weinstein (2007) suggested a universal school-wide model for providing mental health interventions in the school environment. They suggested a three level model in which level one is universal services. Services in the universal level are provided to all students with prevention and mental health competence being the primary goals (Christner. Forrest et al.). In this level, mental health prevention is promoted through programs like Positive Behavior Support, Anti-Drug and Anti-Alcohol Campaigns, Second Step, and peer mediation. Level two, the targeted level, is for children who are at-risk for developing mental health disorders and who have not responded to universal services (Christner, Forrest et al., 2007). This targeted level is still a preventative approach in that the primary goals are to foster mental health competence and to build resiliency factors.

The third and final level is the intensive intervention level in which students with clinically significant mental health problems receive services through small group or individual programs (Christner, Forrest et al., 2007). At this level, comprehensive mental health treatment is the goal and the focus.

School-based mental health as a system of service delivery is designed to be a preventative model in which more children receive the mental health support they desperately need. Many systems of delivery have been proposed in the literature (i.e.,
Adleman & Taylor, 2000; Christner, Forrest et al., 2007; Weist et al., 2010). These theoretical models are beginning to be researched both as systems and as interventions across the continuum of service delivery. Research is just beginning to expand on school-based mental health services and many evidence-based interventions have yet to be discovered. Within the fields of psychology and education, school-based mental health is in its infancy with much to be discovered about these systems through empirical evaluation techniques.

**Depression**

School-based mental health systems are designed to prevent several mental health disorders. One prominent mental health concern for children and adolescents is depression. As discussed earlier, depression is the leading cause of mental health concerns among children and adolescents (DHHS, 1999; NAMHC, 2001). Huberty (2008) asserted that prevention of depression is essential as it aims to keep risk factors from worsening. With the onset of depression in early elementary and middle school years, intervention and prevention prior to these years and during these years is essential.

According to American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR, 2000)*, depression/depressive disorders are a type of mood disorder. One type of depressive disorder is Major Depressive Disorder (MDD), which consists of a depressed mood and/or a loss of interest or pleasure for a two week period in which five or more of the symptoms are exhibited (see Table 1). Major Depressive Episode (MDE) can be described as mild, moderate, or severe and can be with or without psychotic or melancholic features and can be recurrent or chronic. Another type of depressive
disorder is dysthymic disorder, which includes having a depressed mood for most of the
day across most days for at least two years with at least two of the following: (a) poor
appetite or overeating, (b) insomnia or hypersomnia, (c) low energy or fatigue, (d) low
self-esteem, (e) poor concentration or difficulty making decisions, and (f) feelings of
hopelessness. In children and adolescents, mood includes irritability and duration of least
one year with no more than two months void of symptoms, and MDD or MDD In Partial
Remission is not an appropriate diagnosis (see Table 1).

Table 1


1. Depressed mood most of the day, nearly every day, as indicated by either
subjective report or observation made by others. Note: In children and
adolescents, can be irritable mood.
2. Markedly diminished interest or pleasure in all, or almost all, activities most of
the day, nearly every day (as indicated by either subjective account or observation
made by others).
3. Significant weight loss when not dieting or weight gain (e.g. a change of more
than 5% of body weight in a month) or decrease or increase in appetite nearly
every day. Note: In children, consider failure to make expected weight gain.
4. Insomnia or hypersomnia nearly every day.
5. Psychomotor agitation or retardation nearly every day (observable by others).
6. Fatigue or loss of energy nearly every day.
7. Feelings of worthlessness or excessive or inappropriate guilt nearly every day.
8. Diminished ability to think or concentrate, or indecisiveness, nearly every day
(either by subjective account or as observed by others).
9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation
without a specific plan, or a suicide attempt or a specific plan for committing
suicide.
Cognitive Behavioral Therapy

As indicated thus far, the literature on preventative school-based mental health interventions is scarce, especially for children who display behaviors associated with depressive disorders. Techniques, such as Cognitive Behavioral Therapy and Interpersonal Psychotherapy, have been shown to be effective for treating depression in children (Association for Behavioral and Cognitive Therapies [ABCT], 2010). One technique that has extensive empirical support for treating depression in children is Cognitive Behavioral Therapy (CBT; Ellis, 1969; Stark et al., 2005). More specifically, CBT has been shown to be superior to wait-list control studies, relaxation training, supportive therapy, systematic-behavioral family treatment, and traditional counseling (Stark et al.; Weersing & Brent, 2003). Additionally, CBT has been shown to be effective in non-clinical settings (Weersing & Brent). Further, David-Ferdon and Kaslow (2008) concluded that for children experiencing symptoms of depression, CBT provided through group only and through group plus parent components are well-established interventions. However, for adolescents experiencing symptoms of depression, CBT group only was identified as an empirically supported intervention (David-Ferdon & Kaslow).

Statement of the Problem

There is limited research that has explored school-based mental health systems as a preventative service delivery model. Even less research has explored targeted and intensive level evidence-based interventions that are effective within the school environment. Further, the majority of children in need of school-based mental health
services experience symptoms of depression, but few evidence-based interventions targeting these children have been empirically evaluated in school settings.

One CBT intervention that has shown promise is the Adolescent Coping with Depression Course (CWD-A; Clarke, Lewinsohn, & Hops, 1990). The CWD-A was originally designed for children who were depressed, but Clarke et al. attempted to also explore the effectiveness of the CWD-A as a prevention intervention. The CWD-A aims to increase social skills and pleasant activities, decrease anxiety and depressive cognitions, and provide training in communication, problem solving, and planning for the future.

Studies have shown that the CWD-A is effective (Clarke, Rohde, Lewinsohn, Hops, & Seeley, 1999; Rohde, Lewinsohn, Clarke, Hops, & Seeley, 2005) and significant preventative effects have been found (Clarke et al., 2001). Further, the Task Force on the Promotion and Dissemination of Psychological Procedures guidelines have suggested that the CWD-A was probably efficacious (David-Ferdon & Kaslow, 2008). However, the literature has revealed two separate camps regarding the success of the CWD-A with an at-risk for depression group, and no study explored altering the CWD-A curriculum to adapt to the school environment. Finally, according to Promising Practices Network (2008), no strong conclusions for the CWD-A can be drawn until further research is conducted utilizing an at-risk population. It is also important to note that Clarke, DeBar, and Lewinsohn (2003) and Clarke et al. (1995) recommended that “outside” researchers further explore the CWD-A because unaffiliated researchers have conducted limited research. Fortunately, there are evidence-based programs that focus on children at-risk for depression and have clinical signs of depression, such as the CWD-A (Clarke et al.,
However, the CWD-A and other similar programs have not been studied and adapted to fit the needs of the school system (Christner, Stewart, & Freeman, 2007).

**Rationale for the Current Study**

There are several reasons the effectiveness of the CWD-A for children at-risk for depression was researched for implementation in the schools. First, quite recently, Herman et al. (2004) listed several barriers school psychologists have faced in developing prevention of depression interventions: (a) inconsistent findings for depression prevention, (b) limited transportability or cost effectiveness, (c) sociocultural aspects of depression have been ignored, and (d) most prevention trials have focused on individual interventions. The present study addressed three out of four of Herman et al.’s concerns (a, b, and d above). Further, Farmer and Farmer (1999) asserted that few, if any, researchers approached the school as the target of the intervention versus using schools as a site for intervention (i.e., Clarke et al., 1995). Meaning, in previous research, schools served as a convenient location to assemble a group of adolescents versus using schools as a part of the theory in developing the intervention. The present study addressed this concern in the literature as well. Therefore, implementing the CWD-A in the school setting and adapting the program to meet the needs of the school district’s schedule during the school day contributed to filling this gap in the literature.

School settings demand interventions that are cost effective and time efficient. The present study aimed to investigate one intervention that had the potential to meet both needs. Preliminary research suggested that in settings other than the school, the CWD-A might be effective with children at-risk for depression (Clarke et al., 2001).
Although, Clarke et al. (1995) found that depressive episodes were prevented in a high school sample of children at-risk for depression, another group of researchers also explored the effects of the CWD-A on a population of children with “low severity” depression (Rhode, Lewinsohn, & Seeley, 1994). In this study, researchers found no program effects for adolescents with a low severity of depression symptoms (Rhode et al.). Therefore, the present study added to the literature regarding effectiveness of the CWD-A with an at-risk for depression group. Additionally, according to Promising Practices Network (2008), no strong conclusions for the CWD-A could be drawn until further research was conducted utilizing an at-risk population. Finally, because researchers unaffiliated with the development of the intervention have conducted limited research, Clarke et al. (1995) recommended outside researchers further explore the CWD-A.

Clearly, given the problem of school-based mental health programs and the rationale in the current literature and need for future research, the present study was greatly needed in an effort to focus on further exploration of preventative school-based mental health interventions that were designed to be incorporated into the school system and were designed to target students at-risk for depression. Additionally, there was a need for researchers to focus on promising interventions, such as the CWD-A, that have shown effectiveness in the literature.

In the current study, students were screened with measures of depression. Students at-risk for depression who were eligible for this study were randomly assigned to two groups. One group, the experimental group, received a modified version of the CWD-A. The second group, the treatment as usual group, received a coping
skills/problem solving group that consisted of five sessions from curriculum developed by Ann Vernon (1998). The treatment as usual group received the coping skills/problem solving group during the same weeks as the participants in the experimental group. However, students in the treatment as usual group received group therapy every other week. Participants in the treatment as usual group had the opportunity to participate in the more effective intervention upon the completion of the treatment as usual group. A study with this design contributed to the depression prevention literature by providing more consistent findings, maintaining cost effectiveness, focusing on group interventions (rather than individual interventions), utilizing the school setting as the intervention location, and contributing to the literature on the effectiveness of implementing the CWD-A with an at-risk for depression group.

Definitions

At-Risk Students

At-risk students were defined as students who had signs and symptoms of mental health concerns (i.e., depression) but did not have enough concerns to meet a clinical diagnosis. Therefore, they were at-risk for developing a clinically significant mental health concern. Often, these students had “risk factors” (i.e., economically disadvantaged) that outweighed their “protective factors” (i.e., coping skills and family support).

Cognitive-Behavioral Therapy

Cognitive Behavioral Therapy (CBT; Ellis, 1969) is a therapeutic approach designed to decrease symptoms of depression by changing an individual’s cognitive
distortions, increasing positive mood, and establishing problem solving skills to enhancing coping skills during stressful life events (Beck, 2002; Weersing & Brent, 2003). CBT is based on the ideas that a person’s environment, disposition, and behavior influence each other and that one’s behavior is always evolving and changing (Friedberg & McClure, 2002).

**Depression in Children and Adolescents**

According to the *DSM-IV-TR* (2000), children and adults are diagnosed using the same *DSM-IV-TR* criteria because researchers in the field have concluded that expressions of the symptoms of depressive disorders are similar (Hammen & Rudolph, 2003; Stark et al., 2006). MDD can occur with a single episode or can be recurrent. In children and adolescents, symptoms of depression include irritability as well as depressed mood/“feeling blue,” insomnia/hypersomnia, lack of interest/pleasure, fatigue/loss of energy, loss/gain of weight, feelings of worthlessness, difficulty thinking/concentrating, and/or thoughts of death/suicidal ideations.

**Group Therapy/Counseling**

Therapy/counseling can be delivered in individual or group modalities. Group therapy is when one or more professionals deliver treatment to a small group of participants. The group setting can be helpful in creating behavior change and serves as an efficient way to deliver services.

**School-Based Mental Health**

School-based mental health can be defined as simply as “any mental health service delivered in a school setting” (p. 5; Kutash, Duchnowski, & Lynn, 2006).
However, many authors have developed school-based mental health models that are more complex and encompass a more comprehensive service delivery mode.
CHAPTER II
REVIEW OF THE LITERATURE

Introduction

In Chapter II, the author discusses the background of school-based mental health, including how it developed, how it presents today, and best practices for the future of school-based mental health. Emphasis is placed on prevention, as this is the primary goal of school-based mental health. Three school-based mental health models are described as examples. The models include Positive Behavior Support, Interconnected Systems, and the NASP Model called the Continuum of School Mental Health Services as well as variations of this model. Following discussion of these models, the author provides potential future roles for professionals interested in expanding school-based mental health services. Next, the author discusses expanding school-based mental health for the most prevalent mental health diagnosis in children and adolescents: depression. A discussion of evidence-based interventions for depression follows with specific focus on one evidence-based intervention, the Adolescent Coping with Depression course (CWD-A; Clarke et al., 1990). For the CWD-A, the author reviews and critiques studies that evaluated the curriculum and concludes by identifying gaps in the literature followed by the rationale for the current study.

Background on School-Based Mental Health

Kutash et al. (2006) asserted that the development of school-based mental health followed a similar inception to the development of mental health services in the United
States. For example, children’s mental health services in the United States began because the number of youth in jail was drastically increasing. Thus, in the 1920’s, a multilevel approach was designed to provide more support to children. As a result, counseling programs expanded. Around the 1970’s and 1980’s, children-based mental health hospitals began to develop, limiting funding for community-based initiatives (Kutash et al.). Soon after, the first public law for children with disabilities, P.L. 94-142 (Individuals with Disabilities Education Improvement Act [IDEIA], 2004), passed, and the school’s responsibility for students’ mental health services increased.

The term “school-based mental health” has been a common term in school psychology and educational psychology literature, yet few authors have operationalized a definition. Kutash et al. (2006) asserted that it refers to “any mental health service delivered in a school setting” (p. 5). School settings have varied greatly and have included public schools, private schools, schools in hospital settings (e.g., Residential Treatment Facilities), and educational spaces within juvenile justice facilities (Kutash et al.). Traditionally, mental health services in the schools have only been provided to students who were in need of and eligible for special education services under IDEIA (2004). Part of the process of determining need in an educational setting has been that a student’s concerns must have a significant impact on academic performance; whereas, in mental health systems, services have been dependent on children and adolescents meeting specific diagnostic criteria for a psychological diagnosis according to the DSM-IV-TR (2000) versus mental health services being offered to children and adolescents “at-risk”
for clinical mental health concerns. Additionally, funding from insurance and/or private agencies has been essential for service delivery in mental health systems.

To this day, the responsibility for children and adolescents’ mental health services has remained divided between the mental health system and the educational system. Mental health systems have been publically and privately funded establishments designed to intervene with individuals experiencing problems in life (Pennsylvania Department of Public Welfare, 2008). Mental health systems have included settings, such as community mental health/behavioral health centers, hospitals, private practice settings staffed by mental health professionals, and psychologists who work in medical centers. It has been estimated that 21% of children and adolescents are in need of mental health services (Burns et al., 1995; DHHS, 1999; NAMHC, 2001). However, mental health systems and educational systems have only served 20% of children and adolescents who need mental health services (Burns et al., 1995; COE, 2008; NAMHC, 2001; Strein et al., 2003). Still, schools have remained the primary provider of mental health services to children and adolescents through delivery of special education services (Rones & Hoagwood, 2000; Slade, 2002). Some researchers have speculated that this is probably because children and adolescents are more likely to seek support when school-based mental health services are provided (Rones & Hoagwood; Slade). However, a significant number of school districts have reported an increased need for mental health services in light of decreased funding (Foster et al., 2005).

According to Mash (2006), the long-term costs that society faces of failing to provide mental health services to these children in need of mental health services are
Children who do not receive necessary mental health services often experience more complex difficulties later in life that are more costly to address and manage (Mash). For example, as children develop into adulthood, children who do not receive necessary mental health services may turn to drug and alcohol abuse and/or they may commit crimes and earn time in jail or prison. Further, although schools are not required to deliver mental health services, schools are responsible for problems that interfere with a child’s ability to learn (Carnegie Council Task Force on Education of Young Adolescents, 1989; Cash, 2008; IDEIA, 2004). Therefore, in many instances, school-based mental health services are necessary.

School-based mental health services not only have legal relevance in the schools, but these services are also most appropriate and effective in the schools because schools have access to children and adolescents in need of services; schools have experience intervening to meet children’s mental health needs; and children are required to attend school (Condition of Education, 2008; Stark et al., 2005). Interestingly, in school-based settings, children with depressive disorders are as likely as children with disruptive disorders to receive school-based mental health services, which does not hold true for settings outside the school (Mufson, Dorta, Moreau, & Weissman, 2005). Furthermore, public school enrollment is projected to continue to climb over the next ten years to reach approximately 54.1 million students, which would create even greater access to children who need school-based mental health services.

Finally, and arguably most impressive, has been the research on the positive outcomes that resulted from school-based mental health services. For example,
elementary schools that reduced their special education referrals and placements among at-risk students (for depression, Attention Deficit/Hyperactivity Disorder [ADHD], and conduct disorder behavior) improved their school climates (Bruns, Walrath, Glass-Siegel, & Weist, 2004; Hussey & Guo, 2003). Additionally, schools that reduced their disciplinary referrals and grade retentions also improved their school climates (Bruns et al; Hussey & Guo). Some studies demonstrated that greater provision of school-based mental health services positively correlated with increased standardized test scores and with improved academic performance (Fleming et al., 2005; Greenberg et al., 2003; Welsh, Parke, Widaman, & O’Neil, 2001).

**School-Based Mental Health Models**

The public health discipline has developed the public health model as a way to prevent and treat health issues, such as illegal drug use, low birth weight in infants, and HIV and AIDS (Bucy, Meyers, & Swerdlik, 2002; Kutash et al., 2006). The public health model has incorporated three stages of intervention which include universal (i.e., universal prevention), targeted (i.e., secondary prevention), and intensive (i.e., targeted prevention) services (Bucy et al.; Kutash et al.). Traditionally, the universal level is designed to target all citizens (i.e., “Just Say No” anti-drug campaign) to raise awareness to potential problems in life and prevent individual’s risk for future problems (i.e., future drug use). The targeted level is designed for specific communities and/or populations who are at-risk for a particular disease or health concern before the illness manifests (i.e., HIV and AIDS prevention programs for males with male sexual partners). The purpose of the targeted intervention is to decrease and/or prevent symptoms or behaviors that
would otherwise be anticipated given the factors placing them at-risk. Finally, the intensive level is designed for people with specific risk factors or health problems who require rigorous interventions. The desired outcome of the intensive level is to provide services to individuals displaying symptoms or behaviors that are severe and possibly at the level of a clinical disorder.

School-based mental health models have developed from the public health model. Today, there is a dearth of literature evaluating different types of school-based mental health programs. Nastasi and Varjas (2008) discussed best practices in a comprehensive school-based mental health program. They asserted that the program should be driven by theory, research, and practice and framed within an ecological-developmental model that provides a continuum of services to students. The initiative should be a collaborative approach and formal evaluation procedures should occur throughout the process.

More specifically, Doll and Cummings (2008) contributed significantly to the literature by suggesting population-based services should be a component in conceptualizing school-based mental health and in re-conceptualizing the role of the school psychologist within a school-based mental health system. In population-based services, needs assessments are conducted to gain a better understanding about the processes implemented in a school district. Next, a plan is drafted that addresses the most important needs and ongoing evaluation procedures are planned. This view adds to the role of the school psychologist by expanding the focus to include prioritizing the psychological well being of all students and providing all students support to overcome risks and barriers to success. As a part of population-based services, Doll and Cummings
stress the importance of screening the entire student population with a brief, efficient to code, highly accurate measure that can be repeatedly administered. They assert that it is important to consider using risk-based assessments that are designed to detect early symptoms of mental health problems of students that do not meet clinical criteria for a diagnosis. This measure should also detect students that are struggling with clinical symptoms.

Both Nastasi and Varjas and Doll and Cummings highlight one essential component to school-based mental health, prevention. A primary goal of school–based mental health services is to prevent children from developing more serious clinical symptoms (Adelman & Taylor, 2000a; Christner, Forrest et al. 2007; Doll & Cummings; Nastasi & Varjas; Weist et al.). This emphasis is understandable, as researchers have suggested school-based mental health services because such services would aim to decrease social-emotional problems for children (Doll & Cummings). Additionally, these services would increase behavioral and academic performance in children who are both at-risk for developing more serious mental health problems and who already have a mental health diagnosis (Doll & Cummings).

Strein and Koehler (2008) asserted that there are ten critical features of successful prevention programs. The first is that it is theory driven. Meaning, the prevention program is founded on cognitive behavioral and behavioral instructional methods that are efficacious. The second is that the program is developed to match the desired outcomes of the system. For example, if prevention of substance abuse is desired, focus on the environment may be a target. Third, the prevention program must be comprehensive.
Meaning, multiple interventions are utilized across a variety of settings. Fourth, a variety of methods must be incorporated (i.e., skills-based and hands on modalities). Fifth, the prevention program must use structured manuals and/or curriculum to deliver services to ensure structure and consistency. Sixth, the program must encourage positive relationships between the parent and child, student and teacher, or student and student. Seventh, the prevention program must target interventions at appropriate developmental times. For example, a prevention of depression program beginning in twelfth grade may miss a large population of students that have already progressed from an at-risk to clinical stage of depression. Eighth and ninth, staff implementing the program should be well trained and the program should be an appropriate length (i.e., not too short in duration). Tenth, there should be a formal evaluation of the program process and outcomes. These ten critical features of prevention programs are the foundation for many of the school-based mental health models.

Examples of School-Based Mental Health Models

There are many complexities to integrating mental health services into the school environment. Over the past several years, four models have become well researched. They are Positive Behavior Support (PBS; Horner, Albin, Sprague, & Todd, 1999), Mental Health Spectrum (Weisz, Sandler, Durlak, & Anton 2005), Interconnected Systems (Adelman & Taylor, 2006), and the Continuum of School Mental Health Services model (NASP, 2006). The PBS system is designed to decrease challenging behaviors in the school and promote positive behavior choices through school-wide reinforcement programs for prevention and intervention (Horner et al.). Emphasis is
placed on changing the environment to increase student success. The Mental Health Spectrum system includes traditional psychological interventions targeted at specific disorders, which include prevention, maintenance, and recovery strategies, such as psychotherapy and psychopharmacology (Weisz et al.). The third system, Interconnected Systems, involves prevention, early intervention, and treatment for children with serious impairments (Adelman & Taylor, 2000a, 2000b).

Adelman and Taylor, who co-direct the School Mental Health Project (SMHP) and the National Center for Mental Health in Schools (NCMHS; 2010), developed the Interconnected Systems. The SMHP was designed in 1986 to encourage theory, research, practice, and training in school-based mental health. In 1995, the NCMHS was established as a result of the work of the SMHP. The website devoted to SMHP and NCMHS is designed to facilitate collaboration and information dissemination on school-based mental health. Adelman and Taylor’s (2000a, 2000b) Interconnected Systems model is based on a continuum of services that incorporates the school and community. These services span from public health protection/promotion and preschool-age programs (i.e., quality day care and early childhood education) to intervention implementation for students at-risk (i.e., mobile therapy and group interventions) and intensive treatment (i.e., individual therapy, special education, and rehabilitative programs). In their model, Adelman and Taylor (2000b) note three themes: (a) transition from “fragmentation” to “cohesive intervention”, (b) move from “narrow focus, problem-specific and specialist oriented services to comprehensive general
programmatic approaches,” and (c) emphasis on research-based interventions with “high standards” and “accountability” (p. 51).

Although systems like the ones discussed above have been explored in the literature, schools still struggle to effectively implement school-based mental health programs that reflect the unique assets and needs of the school environment (Adelman & Taylor, 2000a). For example, services are often implemented in a “fragmented manner that results in ineffective school-based mental health systems” (Adelman & Taylor, 2000a, p. 171). In response to this issue, NASP (2006) created the Continuum of School Mental Health Services model, which was designed to include collaboration with families and the community to provide school-based mental health services.

The Continuum of School Mental Health Services model is a five tier model where tier one is school-based prevention and universal interventions designed for all students. Tier two is early identification where students with mental health and behavioral concerns are identified. Tier three is the targeted tier where students who are at-risk for mental health problems receive interventions that are community-based. Tier four is the intensive level where students with severe and chronic problems receive community-based interventions. Tier five is the final tier where students with severe and chronic problems receive school-based and community-based interventions. According to NASP, the school psychologist’s role in this model wanes as the tiers increase. For example, all school psychologists are involved at tier one and two, most school psychologists are involved in tier three, and some school psychologists are involved in tier four and five.
Weist has also published extensively on school-based mental health and has explored a model similar to the Continuum of School Mental Health Services model. Recently, Weist and his colleagues (2010) published an article describing the implementation of this model with Baltimore City School District. Weist et al.’s model is a triangular model with four tiers in which the first tier includes the school environment and relationship enhancement. This tier includes the entire learning community (parents/caregivers, community members, school staff, etc.). The second tier is for universal prevention, which are services delivered to all students (i.e., Paths to Pax). The third tier is for selective prevention. This tier is for students that present specific risk factors. Services are delivered via group therapy. Finally, the fourth tier is for indicated prevention or prevention services directed at individual students.

Like Weist, other authors proposed variations of the Continuum of School Mental Health Services model. For example, Christner, Forrest, et al. (2007) suggested integrating school-based mental health into the school environment through a three level system while embedding interventions that correspond to services already delivered in the school. Their multileveled approach included three levels: universal intervention, targeted intervention, and intensive intervention (Christner, Forrest et al., 2007).

The universal level interventions are mental health services that all students receive. The goals of this level are to promote and establish positive mental health in all students while instilling competence in all members of the school. The targeted level interventions are mental health services in which some students who have a specific need or who are at-risk for developing more serious mental health problems receive services.
The goals of this level are to prevent and remediate problems from developing into more clinically significant problems. The third and final level is the intensive level interventions which include mental health services for students who have clinical signs of mental health problems. The primary goal in this level is treatment. The Christner, Forrest, et al. (2007) model follows the public health model in which services develop from a less intense to a more intense level or from prevention to treatment.

Clearly, school-based mental health services can look different, depending on the needs of the system. Not only might the system in which services are delivered look different, but also who delivers the services in schools might be arranged very differently, depending on the school. For example, some schools may choose to utilize staff differently or incorporate community programs into their service delivery models. Some schools may even decide to only serve students who are at-risk and refer students with individual more intensive needs to outside agencies.

**Future Roles for Professionals Who Want to Expand School-Based Mental Health Services**

The struggle to coordinate mental health services across applied settings continues to be a predominant need in the literature (Chorpita, Daleiden, & Weisz, 2005; Public Health Service, 2004). As Doll and Cummings (2008) asserted, a re-conceptualization of professionals’ roles is necessary for the success of the systems change. There are several roles for professionals who are interested in expanding school-based mental health. Five potential roles are described below.
First, several authors have suggested that school-based mental health services need to be expanded away from individual remediation and toward a comprehensive service delivery model that aims to meet all children’s needs (Christner, Forrest et al., 2007; Conoley & Gutkin, 1995; Every Child Matters, 2008; Hyman & Kaplinski, 1994; Stewart, Christner, & Freeman, 2007). Second, expanding the literature on evidence-based interventions that are compatible with schools through a multilevel approach is perceived as a much-needed future step for researchers (Christner, Forrest et al.; Gresham, 2004). Third, a paradigm shift is needed to change policies to support comprehensive approaches that address preventative mental health (Adelman & Taylor, 1998; Every Child Matters; Strein et al., 2003). Advocacy within communities and political arenas is viewed as essential to implement such initiatives.

A fourth role perceived for professionals who are interested in expanding school-based mental health services is to advocate for schools to plan for and carry out the reallocation of finances, staff, space, and equipment to support a school-based mental health initiative (Strein et al., 2003). Fifth, professionals interested in moving toward a school-based mental health model must take a leadership role. Many authors suggested that the school psychologist is a logical starting place for this initiative because of his/her role with mental health and because of his/her background in education and psychology as well as consultation and systems change initiatives (Adelman & Taylor, 1998; Adelman & Taylor, 2003; Bradley-Johnson, Johnson, & Jacob-Timm, 1995; Bramlett et al., 2002; Strein et al.). In order to take on this leadership role, Adelman and Taylor (1998) recommended that school psychologists seek appropriate professional
development to enter the process with appropriate training, competence, and confidence. More than a decade ago, Conoley and Gutkin (1995) summarized the future of education and, namely, school psychology best when they asserted that the future “should not be a matter of where it will leave us, but a matter of where we want it to go” (p. 213).

One area many professionals want school-based mental health to go is to expand the development of school-based mental health services through many of the avenues discussed above in the “Future Roles for Professionals” section. However, the overwhelming question of “Where do we begin?” ensues. Some argue one logical starting point is by targeting depression in children and adolescents since it is the most prevalent youth mental health problem in the United States (SAMHSA, 2008). For example, SAMHSA population studies have shown that 10 to 15 percent of children and adolescents have symptoms of depression. Moreover, once a child or adolescent has experienced clinical depression, he/she at-risk for developing another episode of depression within five years in addition to becoming at-risk for other mental health problems (SAMHSA).

Recently, Nastasi and Varjas (2008) identified a variety of roles for school psychologists within a school-based mental health system that are considered best practices. They discussed these roles as a part of a three-tiered system. For example, they asserted that the school psychologist should take on a leadership role within the system, advocate publically for school-based mental health system, provide consultation to the school for developing a compressive model, and serve as a liaison to facilitate partnerships with the community and surrounding schools. Within the first and second
tiers, school psychologists should assist in developing classroom-based mental health promotion or risk prevention programs and collaborate on conducting classroom-based programs. Within the second tier, school psychologists should conduct groups for students at-risk and groups for early intervention. Within the third tier, school psychologists should provide individual therapy for students. Within all tiers, school psychologists should provide education to other professionals (i.e., administrators, teachers, paraprofessionals) as well as to parents, and they should conduct research to inform the decision makers within the school-based mental health system.

The present study has targeted a student population at-risk for depression. The following paragraphs focus on a discussion of depression in children. Areas addressed include diagnosis and prevalence of the disorder, comorbidity and developmental issues, and cultural factors to consider. Finally, evidence-based interventions for depression are discussed followed by a thorough discussion of one evidence-based intervention, the CWD-A (Clarke et al., 1990).

**Internalizing Mental Health Concerns in Children**

Internalizing disorders involve internal distress and/or excessive self-control or behavioral inhibition (Weiss, Jackson, & Susser, 1997). For example, anxiety, depression, somatizations, and social withdrawal are all types of internalizing disorders that children and adolescents may experience (Weiss et al.). Externalizing disorders are the opposite of internalizing disorders in that they involve problems with other people and/or insufficient self-control or behavioral inhibition (i.e., aggression, delinquency,
oppositional behavior, and problems with attention; Weiss et al.). Internalizing concerns are highly under-identified and under-served (Costenbader & Buntaine, 1999; Coutinho & Denny, 1996; Merrell & Walker, 2004). Some research even suggests that parents are unreliable sources for accurately reporting internalizing and externalizing concerns. For example, parents often fixate on one problem and, consequently, do not report other concerns (Weiss et al.).

A child or adolescent with internalizing problems (and externalizing problems) can receive services in schools if the child or adolescent is determined to be eligible under one of the Individuals with Disabilities Education Improvement Act (IDEIA) categories and in need of special education (2004). Emotional Disturbance (ED) is one of the disability categories from IDEIA. Typically, children diagnosed with depression as well as other mental health concerns (i.e., problems with attention, anxiety, conduct, etc.) may be determined to be eligible for special education services under the IDEIA category, ED. In the schools, ED eligibility determination depends upon the condition meeting one or more of the following: (a) an inability to learn that cannot be explained by intellectual, sensory, or health factors, (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers, (c) inappropriate types of behavior or feelings under normal circumstances, (d) a general pervasive mood of unhappiness or depression, and/or (e) a tendency to develop physical symptoms or fears associated with personal or school problems (IDEIA, 2004). It is also important to note that ED includes schizophrenia (IDEIA). Traditionally, schools conduct a record review (i.e., grades and discipline records) and administer an achievement test to determine if a child has an ED.
However, a more detailed multifactored evaluation is considered best practice. A more comprehensive evaluation should include a record review including grades, discipline records, and health records; achievement test performance; intelligence test performance; behavior rating scale results; formal and informal observations; and interviews with parent(s), teacher(s), and the student, when considered appropriate (Costenbader & Buntaine, 1999; McConaughy & Ritter, 2002). All these components are necessary to rule out physical, cognitive, and sociocultural concerns.

Although children and adolescents must be eligible and in need of special education to receive services in a school, depression can be diagnosed outside of school and schools can work together with medical professionals to deliver services. Many school-based mental health models incorporate identification of children who are at-risk for and who have clinical depression. A discussion of the diagnosis, development, cultural factors, comorbidity, and etiology of depression in children and adolescents follows.

**Diagnosing Depression in Children**

According to Knopf, Park, and Mulye (2008), 37% of children and adolescents with mild symptoms of depression continued to have mild symptoms one year later and 17% had an increase in symptoms associated with depression. Of children and adolescents who experienced moderate to severe symptoms, 44% had the same symptoms one year later. Therefore, the majority of children and adolescents who experience symptoms associated with depression continue to experience the same symptoms or they experience an increase of symptoms within one year.
According to the *DSM-IV-TR* (2000), depressive symptoms can be categorized as a type of mood episode or a type of depressive disorder. Children and adults are diagnosed using the same *DSM-IV-TR* criteria because researchers in the field have concluded that expressions of the symptoms of depressive disorders are similar (Hammen & Rudolph, 2003; Stark et al., 2006). One type of mood episode is Major Depressive Episode (MDE), which consists of a depressed mood and/or a loss of interest or pleasure for a two-week period in which five or more of the symptoms are exhibited (see Table 1). MDE can be described as mild, moderate, or severe and may present with or without psychotic or melancholic features. The episode can be recurrent or chronic.

The most common depressive disorder is Major Depressive Disorder (MDD) which can occur with a single episode or can be recurrent. MDD can be further described as the following: (a) In Partial Remission, (b) In Full Remission, (c) Chronic, (d) With Catatonic Features, (e) With Melancholic Features, (f) With Atypical Features, and (g) With Postpartum Onset (*DSM-IV-TR*, 2000). In general, MDD is categorized as one or more episodes and frequently follows a major life stressor (i.e. death, divorce, etc.). Some research suggests that the onset of depressive symptoms in adolescence (especially with psychotic symptoms and psychomotor retardation) with no psychopathology prior to puberty is more likely to be associated with a diagnosis of Bipolar Disorder (Hammen & Rudolph, 2003).

It is estimated that 10% to 25% of individuals diagnosed with MDD will develop Dysthymic Disorder (Hammen & Rudolph, 2003). Dysthymic Disorder is another type of depressive disorder which includes having a depressed mood for most of the day.
across most days for at least two years with at least two of the following: (a) poor
appetite or overeating, (b) insomnia or hypersomnia, (c) low energy or fatigue, (d) low
self-esteem, (e) poor concentration or difficulty making decisions, and (f) feelings of
hopelessness. “Early onset” is the appropriate specifier for children because it notes that
dysthymic symptoms occurred before 21 years of age. In children and adolescents, mood
includes irritability with the duration of at least one year with no more than two months
void of symptoms and MDE or MDE In Partial Remission are not appropriate diagnoses
(see Table 1). Kovacs, Akiskal, Gatsonis, and Parrone (1994) suggested that MDE and
dysthymic disorder are different in children in that for dysthymic disorder, a negative
affect and “feeling blue” are more prevalent and fewer symptoms of social withdrawal,
fatigue, decreased sleep, and poor appetite are present. However, debate regarding the
ability to differentiate between MDD and Dysthymic Disorder in children and
adolescents, as well as adults, has ensued over recent years (Hammen & Rudolph, 2003).

**Manifestation of Depressive Symptoms in Children and Adolescents**

Although the core symptoms of depression for children remain consistent with
adults, the symptoms can look different developmentally (Hammen & Rudolph, 2003).
For example, separation anxiety is more typical with younger children who are depressed
and less likely in older adolescents. Also, eating disorders are more typical in older
adolescents with depression (Hammen & Rudolph; Fleming & Offord, 1990). Somatic
complaints, irritability, and social withdrawal are also more common symptoms in
children when compared to adults (APA, 2000; Hammen & Rudolph). Researchers have
found that girls are more likely than boys to develop depression. This finding parallels
the pattern found in adults, where women are twice as likely as men to have depression \cite{APA}. Additionally, onset of puberty in females and males and onset of menses in females is associated with increased symptoms of depression \cite{Hammen&Rudolph}.

**Cultural Aspects**

There are several cultural aspects to consider when conceptualizing depression in children and adolescents. These cultural aspects impact the rate of depression in several populations and, thus, increasing the risk factors for depression for these groups of people. For example, low socio-economic status and poverty have been associated with increased rates of depression among children and adults \cite{APA,Hammen&Rudolph,Patel}. Culturally, depression can look very different. For example, somatic complaints may be more pronounced \cite{DSM-IV-TR,Kleinman} (i.e., heart pain or feelings of “imbalance” and fears of being “hexed” or being visited by a deceased friend or relative may occur; \cite{DSM-IV-TR,Kleinman}). However, Patel suggested that core symptoms, such as multiple somatic and psychological symptoms, across time, remain consistent across cultures. Although some authors have reported that the rate of depression has been rather consistent across most cultures, other researchers have suggested that some cultures demonstrate higher rates of depression. For example, two studies showed that Mexican American adolescents suffered from a disproportionate rate of depression \cite{Fornosetal,RobertsRoberts&Chen}. In a study conducted by Iwata, Turner, and Lloyd \cite{Iwata}, African American adolescents reported higher somatic complaints and lower depressive symptoms when compared to peers of
other ethnicities on the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977).

**Co-morbidity**

Disruptive Behavior Disorders, Attention-Deficit Disorders, and Anxiety Disorders have often been confused with depression because symptoms can appear similar in children, especially in the school setting (*DSM-IV-TR*, 2000). For example, in the school setting, a child that is inattentive, struggling with peer relationships, and not following classroom or school rules could be struggling with any of these disorders. Moreover, less than one-third of children who are diagnosed with depression, exclusively experienced depression (Stark et al., 2006). Children that are diagnosed with depression are likely to have comorbid disorders, such as anxiety disorders, attention-deficit disorders, disruptive behavior disorders, substance use disorders, and eating disorders (Hammen & Rudolph, 2003). Anxiety disorders are the most likely to co-occur with depressive disorders (Stark et al.). Some professionals have even theorized that depression and anxiety are the same disorder and that they should fall on a spectrum (Hammen & Rudolph; Stark et al.). Lewinsohn, Rohde, Seeley, and Hops (1991) found that when adolescents and adults are diagnosed with MDD, they were also likely to have dysthymia (and vice-versa). For adolescents with MDD, the lifetime probability of dysthymia was reported as 0.073 versus 0.023 for adolescents without MDD. For adolescents with dysthymia, the lifetime probability of MDD was 0.418 versus 0.176 for adolescents without dysthymia.
Etiology

Research has shown that depression in children is affected by cognitive (i.e., information processing and attribution style), biological (i.e., genetics and neurotransmitter abnormalities), and socioemotional factors (i.e., self esteem, self schemata; Cicchetti & Toth, 1998; Hammen & Rudolph, 2003). Cognitively, information-processing/cognitive schemas, attributional style/control-related beliefs have been influential in depression (Hammen & Rudolph). It is believed that depression can be brought on by errors in thinking, negative schemas, and the tendency to attribute negative outcomes to the self, world, and the future (Beck, 2002; Hammen & Rudolph). Biologically, researchers have found that the brain’s neurochemistry (i.e., influence of hypothalamic-pituitary-adrenal axis, neurohormalonal stress, growth hormones, and serotonergic neurotransmitters) plays a critical role in the onset of depression (Hammen & Rudolph). Specifically, researchers have found that MDD involves a dysregulation of neurotransmitters, such as serotonin, norepinephrine, dopamine, acetylcholine, and gamma-aminobutyric acid systems (DSM-IV-TR, 2000). Some reports even have suggested that alterations of neuropeptides, such as corticotripron-releasing hormone and hormonal disturbances, may be the cause of MDD symptoms (DSM-IV-TR).

Socioemotionally, interpersonal relationships and social problem solving/coping/emotional regulation are believed to impact depression (Cicchetti & Toth; Hammen & Rudolph). For example, interpersonal relationships, such as the parent-child relationship, have impacted depression through caregiver attachment and negative home environments (Hammen & Rudolph). Additionally, research has been developing on the
concept of life stress and life events that may propel the onset of depression (Hammen & Rudolph). It is clear that there are many factors that influence depression. Above, cognitive, biological, and socioemotional factors were reviewed. New theories for prevention and treatment continue to evolve as researchers make strides to enhance their understanding of the etiology of the disorder. Next, the author will discuss evidence-based inventions for depression.

**Evidence-Based Interventions for Depression**

As discussed earlier, there are many factors that contribute to the etiology of depression, such as negative cognition, high rates of negative reinforcement, low rates of positive reinforcement, stressful events, risk factors, and lack of protective factors (Clarke et al., 2003; Frank, Poorman, Egeren, & Field, 1997; Lewinsohn, Hoberman, Teri, Hautzinger, 1985). These theories of the etiology of depression have driven the theories for prevention and treatment of the disorder. Thus, researchers have studied several of these techniques to develop interventions that are evidence-based or empirically-based.

Increasing emphasis has been placed on evidence-based or empirically-based interventions (Mufson et al., 2005; Silverman & Hinshaw, 2008). However, what has considered “evidence” is not as clear-cut as several authors have suggested (Hoagwood, Burns, Kiser, Ringeisen, & Schowenwald, 2001; Myers & Well, 2003). In fact, many different organizations have suggested that “evidence” can qualify as a variety of different things. For example, some have suggested that evidence is measured by the
quantity of evidence while others have suggested that evidence is measured by the quality of evidence. However, between 1995 and 2002, 5,400 citations used the term and numerous federal agencies used the language in legislation, such as No Child Left Behind (NCLB; 2001) and Individuals with Disabilities Education Improvement Act (IDEIA; 2004; Myers & Well).

According to the American Psychological Association (APA; 2005), “evidence-based practice” in psychology is the “best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (p. 1). Moreover, APA recommends that evidence is rooted in clinically relevant research that is based on systematic reviews that include reasonable effect sizes, statistical procedure, evidence, and significance. The field of school psychology has utilized APA’s guidelines and applied them to develop “best practices” for the field.

As discussed earlier, the aim of school-based mental health models is to prevent children from being at-risk for developing more serious clinical symptoms (Adelman & Taylor, 2000a; Christner, Forrest et al. 2007; Doll & Cummings, 2008; Nastasi & Varjas, 2008; Weist et al., 2010). As discussed earlier, Strein and Koehler (2008) identified ten features for best practices of successful prevention programs. The first of the ten features is that the prevention program is founded on cognitive behavioral and behavioral instructional methods that are efficacious.

Interpersonal Psychotherapy and Cognitive Behavioral Therapy (CBT) are two techniques that are predominate the literature. Interpersonal Psychotherapy is a technique in which the focus of the therapy is on current problems and the current problems are
attributed to one or more of four problem areas: grief, role disputes, role transitions, and interpersonal deficits in order to reduce depressive symptoms (Mufson & Dorta, 2003). Interpersonal Psychotherapy has shown to be an effective therapy for adolescents struggling with depression, even when delivered in a school-based setting (Mufson et al., 2004). Mufson, Weissman, Moreau, and Garfinkel (1999) found that patients included in a twelve week Interpersonal Psychotherapy intervention decreased their depressive symptoms and increased their social functioning and problem solving skills compared to a wait-list control group. In one study comparing Interpersonal Psychotherapy to CBT, CBT had an effect size of approximately 0.11 greater (Horowitz, Garber, Ciesla, Young, & Mufson, 2007). However, when researchers explored adolescents with the most severe self-reports of depression symptoms (top 25th percentile on a self-report depression measure), the difference in the effect sizes decreased to approximately 0.50, in favor of CBT. Studies, such as the one by Horowitz et al., demonstrated the effectiveness of Interpersonal Psychotherapy. The present study also highlights the effectiveness of Cognitive Behavioral Therapy. Next, Cognitive Behavioral Therapy (CBT), an evidence-based practice, is discussed.

**Cognitive Behavioral Therapy**

Cognitive Behavioral Therapy (CBT) is designed to decrease symptoms of depression by changing an individual’s cognitive distortions, increasing positive mood, and establishing problem solving skills to enhance coping skills during stressful life events (Beck, 2002; Weersing & Brent, 2003). CBT is based on the theoretical foundation that a person’s environment, disposition, and behavior influence each other
and that one’s behavior is always evolving and changing (Friedberg & McClure, 2002). Friedberg and McClure have identified five key elements of CBT, which are: (a) interpersonal/environmental context, (b) physiology, (c) emotional functioning, (d) behavior, and (e) cognition. Typically, sessions begin with mood or symptom check-in and homework review. Then, an agenda is organized by the client and the therapist, the agenda is followed, homework is assigned, and feedback is provided along with a conclusion for the session (Friedberg & McClure).

CBT techniques are both similar and different with children and adolescents when compared to adults (Friedberg & McClure, 2002). CBT is similar among both populations in that it still incorporates guided discovery, flexible session structure (i.e., agenda setting and feedback), and homework, and it remains problem-focused and goal-oriented. CBT is different with children and adolescents because children and most adolescents are dependent on their parent(s)/guardian(s) bringing them to therapy and paying for the service. Often the children or adolescents have not admitted to having a problem and sometimes they do not have a choice about starting and/or ending therapy. Frequently, their behavior is impacting a system (i.e., family or school) rather than solely themselves as individuals. Increased developmental sensitivity and more developmentally appropriate techniques should be used with children and adolescents since they have varying social-cognitive capacities and varying language development to engage in therapy. Additionally, reinforcement through rewards is a critical consideration when working with children and adolescents. Reinforcement with adults is often internal or is provided by the client rewarding him/herself (Friedberg & McClure).
As discussed earlier, depression can manifest in many different ways depending on an individual’s age, gender, culture, or developmental level. The components of CBT discussed above are often selected when implementing psychosocial interventions to treat depression. CBT is developed out of social learning theory. There are five key components to CBT: environment, physiological factors, emotional functioning, behavior, and cognition (Friedberg & McClure, 2002). CBT incorporates behavioral techniques from operant conditioning and classical conditioning. Techniques, such as problem solving and relaxation, are used in addition to the behavioral components. Additionally, a fundamental component of CBT is to challenge a child or adult’s negative views of self, others, the environment, and the future (Friedberg & McClure). Finally, homework is often assigned to increase generalization.

Lewinsohn and Clarke (1999) completed a review of the research literature on the treatment of depression. They concluded that CBT interventions were superior to other treatments for depression and encouraged the field to continue exploring variations of CBT treatments (i.e., group vs. individual and different target populations – especially youth). They shared that no controlled outcome studies had been conducted with children less than 10 years of age and that few researchers incorporated a maintenance component to their studies. Additionally, they asserted that limited research had been conducted on the prevention of depression in children and adolescents. Thus, a discussion on the research that exists in the prevention of depression literature follows.

In general, CBT has been shown to be effective in reducing the symptoms of depression for children and adolescents (Stark et al., 2005). More specifically, CBT has
been shown to be superior to wait-list control studies, relaxation training, supportive therapy, systematic-behavioral family treatment, and traditional counseling (Stark et al.; Weersing & Brent, 2003). Additionally, CBT has been shown to be effective in non-clinical settings (Weersing & Brent). Further, David-Ferdon and Kaslow (2008) concluded that, for children experiencing symptoms of depression, CBT provided through group-based modalities was a well-established intervention. Additionally, CBT provided through group modalities that include a parent component was also considered a well-established intervention (David-Ferdon and Kaslow). However, for adolescents experiencing symptoms of depression, CBT group only and individual therapy were well-established interventions (David-Ferdon & Kaslow). It should be noted that CBT also has been shown to be effective with ethnic minority adolescents (Rossello & Bernal, 2005). In summary, CBT has been the current psychosocial “treatment of choice” for depressive disorders in children and adolescents (Compton et al., 2004).

In the following paragraphs, four interventions developed from CBT principles are reviewed: Primary and Secondary Control Enhancement Training for Youth Depression (individual), Penn Prevention Program, Self-Control Therapy, and Coping with Depression (CWD-A). These four interventions were selected because they have been well researched in the literature and multiple studies have evaluated their effectiveness. Furthermore, the Promising Practices Network (2008) and ABCT (2010) assert that they are “probably efficacious” interventions for depression.
Primary and secondary control enhancement training for youth depression.

Primary and Secondary Control Enhancement Training for Youth Depression (PASCET; Weisz, Southam-Gerow, Gordis, & Connor-Smith, 2003) is another type of CBT intervention that is designed for children eight to fifteen years of age. PASCET is delivered in fifteen individual sessions held one time per week for sixty to ninety minutes. The intervention focuses on problem solving, pleasurable activities, and coping strategies through two key steps: act and think (Weisz et al.). The PASCET has been shown to decrease depressive symptoms in children (Weisz et al.). More specifically, after children participated in the PASCET intervention, depressive symptoms decreased to a normal range of functioning in eight to fifteen year old children and adolescents recruited from schools settings. The focus of the PASCET intervention is on decreasing depressive symptoms versus treating depression. Research on the PASCET is in its infancy, and Weisz et al. have planned several future studies. At this time, the PASCET is not available to the public.

Penn prevention program.

Penn Prevention Program (PPP; Jaycox, Reivich, Gillham, & Seligman, 1994) is a school-based group prevention program that consists of twelve hour and a half sessions that involve linking thoughts and feelings and enhancing problem solving and coping skills. The PPP was designed for students in middle school, ages ten to thirteen, who are determined to be at-risk for depression and anxiety based on symptoms of depression. Limited information regarding the cost and availability of the PPP was found in the literature or on the World Wide Web.
According to David-Ferdon and Kaslow (2008), PPP probably has been efficacious based on the Task Force on the Promotion and Dissemination of Psychological Procedures guidelines. However, one study found no significant differences in depressive symptoms between the treatment and the treatment as usual group in rural seventh grade students with symptoms of depression and anxiety (Roberts, Kane, Thomson, Bishop & Hart, 2003). In this study, nine schools were randomly assigned the PPP curriculum and nine schools received a treatment as usual curriculum (i.e., health education class). Results revealed that the experimental group reported fewer symptoms associated with anxiety, though no differences for depression were found. Therefore, there has been conflicting evidence regarding the effectiveness of the PPP program (Jaycox et al., 1994; Roberts et al.; Yu & Seligman, 2002). It is important to note that no group was held during the school day. All sessions were held after school.

Self-control therapy.

Self-Control Therapy (SCT; Rehm et al., 1981) is designed to teach children self-management skills through self-monitoring, self-evaluation, and self-reinforcement. SCT has been primarily explored with adult populations. However, some studies have utilized children and adolescents as participants. Unlike the PASCET and PPP, the SCT intervention is not as structured. Rather, it is a theoretical approach to delivering CBT through individual therapy. Therefore, there are no specific modules. The foundation of SCT is based on the theory that depression involves selective attention to negative events, limited reinforcement, increased self-punishment, unrealistic standards, and/or disinterest in responsibility. SCT involves didactic presentations, instructional exercises, and
homework assignments. For example, skills, such as self-monitoring, are taught using direct instruction. Brainstorming long-term consequences, planning self-reinforcement, recognizing attributinal styles, making positive statements about self, and setting goals (i.e., personal hygiene, activity level, etc.) are a few of the skills that may be covered in SCT. The homework assignments are designed to generalize the skills taught in sessions as well as implement self-monitoring strategies. SCT has been implemented primarily in clinical settings. However, it has also been implemented in school settings. Clinically, studies have shown that children’s self-report and interview measures of depression decreased on post-test measures and on eight week follow-up measures after twelve sessions during a five week period (Rehm et al.). In a school-based study, twenty-nine children who were nine to twelve years of age were included in SCT, behavioral problem-solving, or wait-list condition for twelve sessions that were 45 to 50 minutes in length across five weeks (Stark, Reynolds, & Kaslow, 1987). The behavioral problem-solving group’s focus was on building social relationships through pleasant activity scheduling and acquisition of problem-solving skills. Children in the SCT and behavioral problem-solving group demonstrated significant improvement on self-report and interview measures of depression (Stark et al.). Both the SCT and behavioral problem-solving group showed commensurate improvements.

Adolescent coping with depression course.

The Adolescent Coping with Depression Course (CWD-A; Clarke et al., 1990) is one type of CBT intervention that has been shown to be effective. The CWD-A was originally designed for adults who were depressed, called Coping with Depression
(CWD; Antonuccio, 1998). However, as research demonstrated strong outcomes, variations were developed, such as a variation for adolescents who were depressed called the CWD-A (Antonuccio). As the intervention continued to develop, other variations were explored, such as using the CWD-A as a prevention intervention (Clarke et al). The following section reviews the research literature on the CWD-A, as it is the intervention of interest in this study.

**Review of Studies Evaluating the CWD-A Course**

In the following paragraphs, studies that have evaluated the effectiveness of the CWD-A course in treating depression are discussed. The theoretical foundation of the CWD-A course is presented first, followed by a review of the research on this intervention. Research evaluating the effectiveness of the CWD-A to treat adolescents with depression and adolescents at-risk for depression is highlighted.

**Theoretical Basis of the CWD-A Course**

The CWD-A intervention was developed based upon the theory that depression can develop from a stressor that disrupts behavior and causes a “low rate of response contingent on positive reinforcement” (Antonuccio, 1998, p. 3). This positive reinforcement was related to access to reinforcing and/or impactful events and personal skills to interact with the environment in a positive way (Antonuccio). During a depressed phase, an increased level of awareness may also have occurred which may have led to withdrawal and self-criticism (Antonuccio). Therefore, therapy was designed to increase the frequency and quality of pleasant activities while improving social skills,
which children, adolescents, and adults may not use as effectively during a depressed phase (Antonuccio). Additionally, the CWD-A aimed to decrease anxiety and depressive cognitions, to provide training in communication and problem solving, and to plan for the future.

The CWD-A intervention was originally designed as a skills-based, small group intervention. The CWD-A sessions are two hours in length for sixteen sessions over eight weeks. However, variations of this protocol have been explored in the literature. The following paragraphs review research on the CWD-A with children and adolescents with clinical depression and research on the CWD-A with children and adolescents at-risk for depression.

**The CWD-A Research with Children and Adolescents with Clinical Depression**

Studies showed that the CWD-A has been effective for intervening with children and adolescents who have clinical levels of depression. One study found that adolescents with clinical depression at the onset of the study (defined by DSM-IV-TR [2001] criteria for Major Depressive Disorder) improved significantly after receiving the CWD-A intervention. For example, by the end of treatment, 46% of participants no longer met the DSM-IV-TR criteria for Major Depressive Disorder and, by six months post-treatment, these findings were present for 83% of participants (Rohde et al., 2005). In another study, by twenty-four months, 90% of participants ages 14 to 18 years of age no longer met American Psychiatric Association’s *Diagnostic and Statistical Manual, Third Edition, Revised* (DSM-III-R, 1987) criteria for Major Depressive Disorder or Dysthymia (Clarke et al., 1999). Clearly, researchers demonstrated the effectiveness of the CWD-A. More
specific studies about the CWD-A with children and adolescents with clinical depression follow.

Kahn and Kehle (1990) explored the effectiveness of the CWD-A with adolescents in a middle school through a pretest-posttest treatment as usual group design. Participants were between ages 10 and 14 years of age and inclusion in the study was based on student’s meeting criteria established on the “multi-stage multi-method assessment model.” This method utilized broadband and narrowband instruments for detecting depression. Compared to the treatment as usual group, the experimental group showed gains on self-report measures and interview data. These results were also true one month post treatment. Qualitatively, more experimental participants moved from the clinical range to the functional/non-depressed range on posttest measures, including one month post intervention follow-up. Approximately 60% of treatment as usual group participants were in the clinical range at one month post intervention follow-up. Visual inspection of post intervention follow-up data suggested that parents in both the control and experimental group perceived the treatment outcomes similar to their adolescent’s self-report. Approximately half of the participants rated their treatment as “very helpful” and half rated their treatment as “somewhat helpful.” It is important to note that the authors encouraged future researchers to use the DSM rather than the multi-stage multi-method assessment model because the DSM is better for generalization and study replication.

Lewinsohn, Clarke, Hops, and Andrews (1990) explored the effectiveness of the CWD-A with high school students who were clinically depressed. Students were
randomly assigned to one of three treatment conditions: adolescent only, adolescent and parent, and wait-list control. Results showed that participants in the adolescent and parent treatment and the adolescent only treatment improved more than participants in the wait-list control. More specifically, participants in the treatment conditions significantly reduced their scores on self-report measures of depression. However, there were no differences between the two treatment groups (adolescent only and adolescent and parent conditions). Therefore, in this study, the parent component did not significantly impact treatment outcomes.

Clarke et al. (1999) conducted a replication study of the Lewinsohn et al. (1990) study to re-explore the effects of CBT and maintenance CBT for adolescents with depression. Participants were randomly sampled into one of three groups: group CBT, group CBT with a parent group, or wait-list control. The participants in the treatment groups were then randomly assigned to one of two conditions: assessment every four months and assessment only every twelve months. The results were almost identical to their previous findings. Overall, students who participated in one of the treatment groups had a reduction in their self-report scores on measures of depression. Additionally, results for the adolescents in the CBT group were not significantly different than adolescents in the CBT group with a parent group. This follow-up study also found that the parent component did not significantly impact treatment. Further, booster sessions did not significantly impact the rate of re-occurring symptoms of depression. However, the booster sessions appeared to help students who still reported feelings of depression at the end of treatment.
Rohde, Clarke, Lewinsohn, Seeley, and Kaufman (2001) explored the effects of past comorbidity on treatment. These researchers took data from previous studies on the CWD-A and included the 52.4% of participants who reported having one or more comorbid diagnoses at intake (21.2% with anxiety, 19.9% with another disability [i.e., ADHD, Conduct Disorder, or Oppositional Defiant Disorder], and 11.3% with substance abuse). Results showed that depressed adolescents with comorbidity were more depressed than participants without comorbid disorders. At the end of treatment, participants with comorbid disorders were comparable to participants without a comorbid disorder.

Kaufman, Rohde, Seeley, Clarke, and Stice (2005) explored the components of a CBT intervention that contribute to effective outcomes. Specifically, they investigated adolescent’s reports on the following: effective use of social skills, frequency of pleasant activities, effective use of relaxation skills, frequency and degree of negative thoughts and attitudes, and effective use of problem-solving skills. Researchers randomly assigned adolescents with MDD and Conduct Disorder to a CWD-A group or to a life skills control condition. The CWD-A intervention appeared to have a positive impact on adolescents’ negative thoughts and attitudes that the researchers hypothesized contributed to the decline in self-reports of depressive symptoms. It is important to note these results because this study compared the CWD-A to a non-specific treatment versus a no-treatment/wait-list control. Furthermore, the intervention did not impact adolescents’ belief systems. However, because participants reported a decline in their depressive
symptoms as a result of a decrease in their negative thoughts and attitudes, researchers believe that intensive CBT may not be necessary.

In summary, researchers explored the CWD-A for intervening with clinical depression (often defined as meeting the DSM criteria for Major Depressive Disorder). Overall, researchers found that the CWD-A is effective for intervening with both middle school students and high school students. In general, these results were observed on pretest/post test self report and parent report measures. Additionally, some studies incorporated follow-up measures that were administered between eight weeks and twenty-four months post-intervention. On these measures, significant effects were found, indicating the positive results of the intervention were maintained. Finally, the addition of a parent component and booster sessions were not found to significantly impact the results of the intervention.

**Evaluation of the CWD-A Program with Individuals At-Risk**

As discussed earlier, several authors found the CWD-A to be effective with different populations who had clinical depression. For example, Clarke et al. (1995) found that depressive episodes were prevented in a high school sample of children with depression. However, researchers also explored the effects of the CWD-A on a population of children with “low severity” depression/an at-risk group.

Clarke et al. (1995) investigated preventing depressive episodes in adolescents in high school who were at-risk for depression. Adolescents with elevated scores on the Center for Epidemiologic Studies-Depression Scale (CES-D) and with clinical interviews in which the participant demonstrated symptoms of depression were included in the
study. These students were then randomly assigned to the CWD-A group or to a “usual care” control condition. All interventions occurred on school grounds after school. Results indicated that at the twelve-month follow-up, participants in the CWD-A group had a total incidence rate of 14.5% versus the treatment as usual group that had 25.7% incidence rate.

Stice, Burton, Bearman, and Rohde (2006) explored the effectiveness of a CBT prevention of depression program with students from two high schools and one college. They assigned participants to six conditions: wait-list control, CBT, supportive-expressive group intervention, bibliotherapy, expressive writing, and journaling. The researchers used a modified version of the CWD-A for their CBT intervention. Although all five intervention conditions produced greater results when compared to the wait-list treatment as usual group, the CBT and bibliotherapy interventions demonstrated stronger effects during post-intervention follow-up. Additionally, the CBT group, bibliotherapy group, and supportive-expressive group showed stronger decreases in depressive symptoms than the other intervention groups.

Stice, Rohde, Seeley, and Gau (2008) further explored prevention of depression with adolescents in high school. They randomly assigned adolescents at-risk for depression to one of four conditions: CBT, group supportive-expressive intervention, bibliotherapy, or assessment-only control condition. The curriculum used for the CBT group was a modified version of the CWD-A. The authors asserted that this study was a novel contribution to the literature because it was the first study to have explored prevention of depression with credible alternative interventions. Results showed that the
CBT intervention had significantly more reductions, including more rapid reductions, in depressive symptoms on post-test measures than the other interventions. These authors also concluded that effectiveness trials for prevention of depression using a CBT methodology should be explored in the schools.

More research by Clarke et al. (2001) targeted offspring of adults who were being treated for depression. Offspring were identified as at-risk for depression and received fifteen one hour sessions provided in a health maintenance organization (HMO) setting. Significant preventative effects were found (Clarke et al., 2001). Additionally, Clarke et al. (1995) explored the effectiveness of an adapted version of the CWD-A in an after school program for high school students that was held for approximately one hour, three times a week for five weeks. Significant preventative effects also were found in this study.

Lynch et al. (2005) explored the cost-effectiveness of the CWD-A intervention to prevent depression in offspring of parents with depression. Researchers concluded that the program was cost effective in comparison to other health interventions. They estimated the cost was $1632 per participant. This study significantly contributed to the literature because to date, there were no other studies that explored the cost-effectiveness of interventions to prevent or treat adolescents at-risk for depression.

Finally, according to Promising Practices Network (2008), no strong conclusions for the CWD-A can be drawn until further research is conducted utilizing an at-risk population. It is also important to note that Clarke et al. (1995; 2003) recommended that outside researchers further explore the CWD-A because there is limited research
conducted by unaffiliated researchers and it is necessary to eliminate the “founders effect,” the effect of authors finding positive results for their own theories or developments.

Conclusion

Professionals in educational settings have the opportunity to support children and adolescents who experience mental health concerns, such as depression, through school-based mental health initiatives. Support for youth with symptoms of depression is likely to improve their behavior in school, as well as their academic performance. Several models for school-based mental health have been posed in the literature. However, these models depend on evidence-based interventions for each population that a school district aims to serve (i.e., universal, targeted, and intensive interventions). Through establishing evidence-based targeted interventions, schools may have the opportunity to prevent clinical depression and, thus, the need for intensive interventions as well as eligibility and need for special education services. Unfortunately, there is limited research that has been conducted on evidence-based interventions for preventing depression, especially in school settings. Consequently, the literature would benefit from future evaluation of the effectiveness of evidence-based interventions for children and adolescents at-risk for depression.

The Task Force on the Promotion and Dissemination of Psychological Procedures guidelines suggested that the CWD-A is probably efficacious (David-Ferdon & Kaslow, 2008). However, no study has explored altering the CWD-A curriculum to adapt to the
school environment. Adapting the CWD-A curriculum to the school environment may include delivering the curriculum during the school day, decreasing the number of total sessions, decreasing the time spent in the intervention per week, delivering each session on a rotating schedule (i.e., during a different class period each week), and incorporating teacher and parent pre- and post-test information.

The CWD-A is a CBT and evidence-based intervention for children and adolescents with depression. It is a promising intervention for children and adolescents at-risk for depression. Therefore, it was compelling to further explore the effectiveness of the CWD-A in a school-based setting by integrating it into the school day in an effort to discover solutions for children and adolescents at-risk for depression.

**Rationale for the Current Study**

The purpose of this study was to explore the effectiveness of a modified version of the CWD-A as a school-based intervention targeted at students who were at-risk for depression and were in a fifth, sixth, seventh, and eighth grades. There were several reasons the effectiveness of the CWD-A for children at-risk for depression needed to be researched for implementation in the schools. First, quite recently, Herman et al. (2004) listed several barriers school psychologists have faced in developing prevention of depression interventions: (a) inconsistent findings for depression prevention, (b) limited transportability or cost effectiveness, (c) sociocultural aspects of depression have been ignored, and (d) most prevention trials have focused on individual interventions. This study addressed three out of four of Herman et al.’s concerns (a, b, and d above).
Further, Farmer and Farmer (1999) asserted that few, if any, researchers approached the school as the target of the intervention versus using schools as a site for intervention (i.e. Clarke et al., 1995). The present study addressed this concern in the literature as well. Therefore, implementing the CWD-A in the school and adapting the program to meet the needs of the school district’s schedule during the school day filled a gap in the literature.

Second, schools demand interventions that are cost effective and time efficient. This study aimed to investigate one intervention that had the potential to meet both needs. Third, preliminary research suggested that in settings other than the school, the CWD-A might be effective with children at-risk for depression (Clarke et al., 2001). Fourth, although, Clarke et al. (1995) found that depressive episodes were prevented in a high school sample of children at-risk for depression, another group of researchers also explored the effects of the CWD-A on a population of children with “low severity” depression/an at-risk group (Rhode et al., 1994). In the Rhode et al. study, researchers found no program effects for adolescents with a low severity of depression symptoms. Therefore, the literature revealed two separate theories regarding the success of the CWD-A with an at-risk for depression group. Additionally, few studies explored implementing the CWD-A with a middle school population and no known studies have implemented the course with a population that included fifth grade.

Finally, according to Promising Practices Network (2008), no strong conclusions for the CWD-A could be drawn until further research was conducted utilizing an at-risk population. It is also important to note that Clarke et al. (1995) recommended outside
researchers further explore the CWD-A because unaffiliated researchers have conducted limited research.

Clearly, given the problem of school-based mental health programs and the rationale in the current literature and need for future research, a study was greatly needed that focused on further exploration of preventative school-based mental health interventions that were designed to be incorporated into the school system and were designed to target students at-risk for depression. Additionally, researchers needed to focus on promising interventions, such as the CWD-A, that have shown effectiveness in the literature.
CHAPTER III

METHODOLOGY

Introduction

This study examined the effects of the Adolescent Coping with Depression course (CWD-A; Clarke et al., 1990) with students at-risk for clinical depression. Students were screened using measures of adjustment and depression. Students at-risk for depression who were eligible for this study were randomly assigned to two groups. One group, the experimental group, received a modified version of the CWD-A. The second group, the treatment as usual group, received a coping skills/problem solving group that consisted of five sessions from curriculum developed by Ann Vernon (1998). The treatment as usual group received the coping skills/problem solving group during the same weeks as the participants in the experimental group. However, students in the treatment as usual group received group therapy every other week. Participants in the treatment as usual group had the opportunity to participate in the CWD-A intervention upon the completion of the treatment as usual group, because it was determined to be more effective.

Participants

After the screening procedure, twenty-three students were identified to participate in the present study. The screening procedure is discussed in detail later in this chapter. One male dropped out of the treatment as usual group because his teacher was requiring him to make-up work during recess, and he wanted to participate in recess. Therefore,
twenty-two students participated during the entire intervention and twenty-two students were included in the data analysis portion of this study. For the remainder of this document, “participants” refers to students who completed the intervention groups (i.e., twenty-two participants). The retention rate for the present study was 96%.

Participants included twenty-two students enrolled in grades five, six, seven, and eight in a rural school district in Pennsylvania. Participants were recruited from two buildings: one that housed the fourth and fifth grades and a middle school that housed sixth, seventh, and eighth grades. Participant ages ranged from ten to fifteen years of age and 59% were male and 41% were female. In the experimental group, there were eleven participants who had a mean age of 11.64 years ($SD = 1.21$) and 64% were male and 36% were female. In the treatment as usual group, there were eleven participants who had a mean age of 12.00 years ($SD = 1.61$) and 55% were male and 45% were female. The rural school district in Pennsylvania had approximately 2,186 students in grades K to 12. In this district, 59% of the population was female and 51% was male. The racial/ethnic composition included 94% Caucasian, 2% Hispanic, 2% African American, 2% Asian and/or Pacific Islander, and less than 1% American Indian. The school district had approximately 11% of students participating in free and reduced lunch services. The 4th and 5th grade building within this rural school district had approximately 330 students and had 92% Caucasian, 3% Hispanic, 2% African American, 2% Asian and/or Pacific Islander, and less than 1% American Indian. The 4th and 5th grade building had approximately 13% of students participating in free and reduced lunch services. The middle school within this rural school district had approximately 518 students in grades 6
to 8 and had 93% Caucasian, 2% Hispanic, 2% African American, 3% Asian and/or Pacific Islander, and less than 1% American Indian. The middle school had approximately 11% of students participating in free and reduced lunch services.

**Instruments**

**Beck Youth Inventories**

The Beck Youth Inventories, Second Edition (BYI-II; Beck, Beck, & Jolly, 2005) was used to screen children for the study and as a post-intervention measure to assess for progress (for both experimental and treatment as usual groups). The BYI-II is a self-report measure for children and adolescents ages 7 to 18 and assesses symptoms of depression, anxiety, anger, disruptive behavior, and self-concept. Each of the five inventories includes twenty questions about ideations, feelings, and behaviors that pertain to problems in social-emotional functioning, for a total of one hundred questions. Administration is projected to take five minutes. The five inventories are: self-concept, anxiety, depression, anger, and disruptive behavior. Scores are reported as T-Scores. The BYI-II is designed to be used as an individually or group administered screening tool to track students over time and to identify children in need of services. The depression inventory is designed to screen for early identification of symptoms of depression and negative thoughts about self, life, and the future. Feelings of sadness, guilt, and problems with sleep are also investigated. The anxiety inventory is designed to screen for concerns about school performance, the future, fears (i.e., loss of control), and other physiological symptoms related to anxiety. The anger inventory investigates children’s thoughts of
being treated unfairly by others, feelings of anger, and feelings of hatred. The disruptive behavior inventory screens for thoughts and behaviors associated with conduct disorder and oppositional defiant disorder. Finally, the self-concept inventory screens for thoughts of competence, potency, and positive self-worth. For the purposes of screening, all five inventories were used in order to eliminate other social-emotional concerns (i.e., anxiety, anger, disruptive behaviors, etc.). The full inventory was referenced as the Beck Youth Inventories, Second Edition or BYI-II. For data analysis, only participants’ scores on the depression inventory were used, and these were referenced as the Beck Depression Inventory for Youth or BDI-Y. For data analysis, only the BDI-Y inventory was accessible.

The BYI-II was normed on a population representative of age, gender, ethnicity, and social economic status in the United States between 1999 and 2000. Reliability for the BYI-II was reported in terms of internal consistency and test-retest reliability. Both were reported within the acceptable range (Beck et al., 2005). Validity for the BYI-II was reported in terms of interrelatedness of the inventories, relatedness to other instruments, and scores obtained by criterion groups and matched samples. The results for the validity of the BYI-II were within the acceptable ranges (Beck et al.).

**Beck depression inventory for youth.**

As stated earlier, the depression inventory is designed to screen for early identification of symptoms of depression and negative thoughts about self, life, and the future. Feelings of sadness, guilt, and problems with sleep are also investigated. The BDI-Y contains items such as “I feel sad,” “I feel lonely,” “I cry,” and “I think about the
future.” Students rate themselves on a scale that ranges from 0 to 3 where 0 is “never,” 1 is “sometimes,” 2 is “often,” and 3 is “always.” Therefore, a student’s raw score can range from 0 to 60. Raw scores are converted into T-scores based on four norm groups (females 7-10, males 8-10, females 11-14, males 11-14). T-scores have a mean of 50 (SD = 10), where a T-score of 70 and greater is “extremely elevated,” scores between 60 and 69 are “moderately elevated”, scores between 55 and 59 are “mildly elevated,” and scores 55 and below are “average.” The alpha coefficients for the standardization sample by age band and sex for the BDI-Y are the following: female 7-10 = 0.91, female 11-14 = 0.92, male 7-10 = 0.90, male 11-24 = 0.92. The test-retest means are the following: female 7-10 M = 48.04 (SD = 9.32) and 47.25 (SD = 8.67), female 11-14 M = 48.20 (SD = 8.27) and 48.44 (SD = 10.43), male 7-11 M = 48.31 (SD = 7.58) and 45.30 (SD = 7.30), male 11-14 M = 48.08 (SD = 8.35) and 48.64 (SD = 9.58).

Behavior Assessment System for Children

Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) is a series of rating scales. The BASC-2 Teacher Rating Scales (BASC-2-TRS) and the Parent Rating Scales (BASC-2-PRS) were used to measure the social-emotional functioning of students pre-intervention and post-intervention for both experimental and treatment as usual groups. Only the “withdrawal” subscale was used for data analysis, as this subscale is the best measure of the area of interest, symptoms of depression. This subscale was referred to as BASC-2-TRS-W (teacher scale) and BASC-2-PRS-W (parent scale). The full rating scales were administered to inform the pre-intervention and post-intervention needs of participants. The BASC-2 is designed for
children 2 to 21 years of age and scores are reported in T-Scores. The BASC-2-TRS and
the BASC-2-PRS take approximately ten to twenty minutes to complete. The
BASC-2-TRS has 100 to 139 items and assesses adaptive and problem behaviors in the
school setting by asking teachers to rate the child on a four-point scale from “never” to
“almost always.” The BASC-2-PRS is written for a fourth-grade reading level, has 134
to 160 items, and assesses adaptive and problem behaviors in the community and home
settings. A four-point response format like the one used in the BASC-2-TRS is used.
Respondents are asked about a wide range of adaptive and problem behaviors in the
BASC forms, including activities of daily living, adaptability, aggression, anxiety,
attention problems, atypicality, conduct problems, depression, hyperactivity, leadership,
learning problems, social skills, somatization, study skills, and withdrawal. Four
composite scores are derived from the items: (a) adaptive skills, (b) behavioral symptoms
index, (c) externalizing problems, and (d) internalizing problems. The BASC-2 was
normed on a population representative of the United States Census population
characteristics. For the BASC-2-TRS and BASC-2-PRS, reliability was reported within
the acceptable ranges for internal consistency, test-retest reliability, and interrater
reliability. For the BASC-2-TRS and BASC-2-PRS, validity was reported within the
acceptable ranges for scale intercorrelations and factor structure, the pattern of
correlations of composite and scale scores with scores obtained on other behavior
measures, and score profiles of groups of children with particular clinical diagnoses or
educational classifications.
Center for Epidemiologic Studies Depression Scale

Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was used as a progress monitoring tool to alert the group facilitators to changes in participants’ depressive symptoms. It was originally developed as a tool to study the epidemiology of depressive symptoms in the general adult population (Clarke et al., 1990; Radloff, 1977). The CES-D scale was designed to be a shorter measure than several depression scales prior to its creation (Radloff, 1977). Therefore, the items on the CES-D were selected from some of these previously validated depression scales (Radloff, 1977).

The CES-D is a twenty item self-report scale and the scores can range from 0 to 60. For adults and adolescents, scores above 27 are considered to “possibly have major depression” (Radloff, 1977; 1991). Scores between 16 and 26 are considered to have “mild to moderate symptoms” (Radloff, 1977; 1991). However, the authors have emphasized that for individuals, the symptoms should be interpreted and are more important than the score. Some research has suggested that adolescents’ scores in the “mild to moderate symptoms” range are more robust and that females rate themselves higher (Manson et al., 1990; Radloff, 1991). Therefore, the recommendation from the authors is that for interpretation, the higher the score the more symptomology (Radloff, 1977; 1991). Scores are a sum of the participant’s responses on a four point Likert-type scale. Participants are asked to rate their symptoms of depression over the previous week from “rarely” to “most or all of the time.” Scores can range from zero to sixty; a score of sixteen or greater is considered in the at-risk for depression range.
The CES-D was found to have high internal consistency and adequate test-retest reliability (Radloff). Radloff correlated the CES-D with other self-report measures and found that the CES-D was valid based upon its similarity to these measures (concurrent validity) and substantial evidence on construct validity. Reliability and validity are reported to remain consistently strong across demographic characteristics in the general population (Radloff). Additionally, Roberts, Andrews, Lewinsohn, and Hops (1990) further explored the operating characteristics for using the CES-D with adolescents in grades nine through twelve. They found the CES-D had good internal consistency and test-retest reliability. They asserted that the CES-D scale appears to be appropriate for use with adolescents. Although, they noted that women tend to report more depressive symptoms when compared to men. Prescott et al. (1998) explored the use of the CES-D with ethnic minority adolescents. These researchers’ results supported the use of the CES-D as a screening tool for use with adolescents of ethnic minority backgrounds. Schoenbach, Kaplan, Grimson, and Wagner (1982) also explored the use of the CES-D with an adolescent population in junior high school (grades six through eight). They determined that the CES-D had good internal reliability with this population.

Since the inception of the CES-D, many researchers have used the CES-D with adolescents. Researchers have developed modified CES-D scales to use with adolescents, but the research has shown that the original CES-D is equally effective provided the adolescent norms are used (Clarke et al., 1990). Roberts et al. (1990) found that the mean CES-D score for adolescents is nineteen which is above the mean for adults.
suggesting that, on average, adolescents report more depressive symptoms than adults on the CES-D scale.

Several studies have utilized the CES-D scale with adolescents. The authors of the CWD-A used the CES-D in many of their studies (i.e., Clarke et al., 1995; Clark et al., 2001; Rohde, Lewinsohn, & Seely, 1991). As a result, they suggested using the CES-D in future studies (Clarke et al., 1990). Further, several other researchers have also used the CES-D with adolescents. For example, Garrison, Addy, Jackson, McKeown, and Waller (1991) used the CES-D with over 2,000 young adolescents in their screening procedures and Field, Diego, and Sanders (2001) used the CES-D with seventy-nine adolescents to explore adolescent depression and risk factors.

**Procedure**

**Background**

The rural Pennsylvania school district hired the school psychologist to lead a school-based mental health initiative within the school district. The school psychologist along with the school district planned for a continuum of mental health service delivery that progressed from universal services to targeted services to intensive services. One component that the school district identified as an area of need was in delivering targeted services. Therefore, the school district planned to increase its service delivery to this population during the 2008 to 2009 school year. The district determined that the populations for targeted services were students in grades five, six, seven, and eight who were at-risk for depression because the school psychologist and principals identified a
large population of need in that environment. Having school-based mental health experience and knowledge, the school psychologist suggested that during the 2008 to 2009 school year, the district try two groups he had familiarity with – the CWD-A and the Vernon curriculum. Conveniently, the school counselors also had familiarity with the Vernon curriculum. Therefore, at the end of the 2007 to 2008 school year, the district decided to proceed with the expansion of their school-based mental health initiative by offering two groups to students: the CWD-A group and the Vernon curriculum, also called the treatment as usual group. The district school psychologist and the school psychology intern facilitated the screening of students for depression and the implementation of group counseling. The author of this study was the school psychology intern.

Screening

The principals for grades five, six, seven, and eight provided a list of students to screen for the groups to the school psychologist and school psychology intern. These lists were compiled from each principal’s records as well as teacher referrals. These mental health concerns included both internalizing and externalizing behavioral concerns. No advertising for the groups occurred. Students with immediate, clinical concerns were referred to community mental health professionals for intensive and individual therapy. The school psychologist and school psychology intern obtained permission to screen participants for the groups (see Appendix A). Parent(s)/guardian(s) whose children met the screening criteria were called and informed. Following the phone call, a permission to participate in the groups was sent home (see Appendix B). Students whose
parent(s)/guardian(s) returned the permission to participate in the groups were included. As needed, follow-up phone calls were made. It should be noted that these procedures were first conducted in grades six, seven, and eight. A limited number of students returned permission slips and were appropriate for group. Therefore, a second recruitment process occurred, including fifth, sixth, seventh, and eighth graders. This resulted in another screening process and another series of groups.

The screening process consisted of administration of the BYI-II, CES-D, and a semi-structured interview (see Appendix C). The procedure for using self-report rating scales as well as a semi-structured interview has been used in several similar studies (i.e., Clarke et al., 2001; Clarke et al., 1995; Kahn & Kehle, 1990; Kaufman et al., 2005; Stice et al., 2008; Stice et al., 2006). As previously stated, the BYI-II includes all five inventories (self-concept, anxiety, depression, anger, and disruptive behavior). The semi-structured interview was used to gain a better understanding of each student’s protective and risk factors. Appendix D contains the letter permitting the author of this study to use the database containing pre- and post-intervention and progress monitoring data for students who participated in group counseling.

As a result of the screening, parent(s)/guardian(s) of students who had clinically significant BYI-II or CES-D scores and/or who exhibited signs/symptoms of a student who is at-risk for depression during a semi-structured interview were called on the phone to inform them of the results. Following the phone call, parent(s)/guardian(s) were sent a consent form to allow their child participate in the group (see Appendix B). Students who were not appropriate for the intervention and/or who demonstrated more significant
clinical concerns were referred to the Student Assistance Program by the school psychologist and school psychology intern. Additionally, the school psychologist and school psychology intern informed parent(s)/guardian(s) of the results and told them that the principal would be in touch with them to proceed with the Student Assistance Program referral for intensive intervention services. Follow-up phone calls were made to parent(s)/guardian(s) who did not return the consent form within two weeks. The students whose parent(s)/guardian(s) sent back the permission form by the group start date were included in the group.

Participants were randomly sampled by the school psychologist and school psychology intern into two groups: (a) experimental group (the modified CWD-A curriculum) and (b) treatment as usual group (Vernon curriculum). The names of students who participated in the group were listed alphabetically and were assigned sequential numbers in alphabetical order. Then, the school psychologist and school psychology intern used a random number generator to randomly assign participants to the two groups (Statistical Package for the Social Sciences, 15.0.1 version [SPSS]; SPSS Inc., 2006). The first halves of numbers generated were assigned to the experimental group and the last half of numbers generated were assigned to the treatment as usual group.

**Research Design**

Twenty-two students participated in the current study during the entire intervention, one student dropped out due to missing recess to make up missed work. Participants were randomly sampled into two groups: experimental group (the modified
CWD-A curriculum) and a treatment as usual group (Vernon curriculum). Originally, eleven students were in the experimental group and twelve students were in the treatment as usual group. After one student dropped out, there were eleven students in the experimental group and eleven students in the treatment as usual group. Of the eleven students in the experimental group, five were in grade five, two were in grade six, three were in grade seven, and one was in grade eight. Of the eleven students in the treatment as usual group, six were in fifth grade, two in sixth grade, two in seventh grade, and two in eighth grade. The student that dropped-out was a fifth grade student which resulted in five students in grade five, two students in grade six, three students in grade seven, and one student in grade eight in the experimental group.

The procedures were a pre-test post-test treatment as usual group research design with random assignment of a convenient group of twenty-two subjects to one of two groups (n = 11 experimental; n = 11 treatment as usual) for the BASC-2-TRS, BASC-2-PRS, and the BDI-Y. As stated previously, the BDI-Y refers to the specific inventory used for depression, Beck Depression Inventory for Youth, which is a part of the BYI-II. The procedure for the CES-D was a time series research design used with both the experimental and treatment as usual groups. The pre-test post-test research design is an experimental design. It was recommended by Campbell and Stanley (1963) because it is a simple research design; however, it provides reasonable controls for internal validity considerations.

A “treatment as usual” group refers to a group of participants who received a treatment that was used with a similar population prior to the start of the study. This term
is used commonly in the literature, but it is not formally defined in the literature. For the purposes of this study, the treatment as usual group was not a control group design or a wait-list design because students received treatment upon being identified rather than withholding treatment or delaying the start of treatment. The treatment as usual group was selected rather than a control group design or a wait-list design because services were available for this population, who was identified as having a need. More specifically, this approach aligned with the American Psychological Association’s Ethical “Principal B: Fidelity and Responsibility” because psychologists must act in the best interest of their clients (APA, 2005). Furthermore, the treatment as usual curriculum by Vernon (1998) was selected for practical reasons. For example, the curriculum received by the treatment as usual group was clinically relevant because the school psychologist and school counselors within the district were familiar with and used selected modules from the curriculum. Additionally, it is a structured curriculum that can be implemented by other professionals.

The time series research design involved a periodic measurement process on one or more groups and the introduction of an experimental change into the time series measurement. The results were indicated by a discontinuity in the measurements recorded during the time series process.

Table 2 and Table 3 illustrate the data collection schedule across the ten week experimental condition and the five week treatment as usual condition. The BYI-II, BASC-2-TRS, and BASC-2-PRS were collected pre- and post-intervention for both the experimental and the treatment as usual group. The CES-D was collected each time the
experimental and treatment as usual groups met. Therefore, the experimental group completed ten CES-D measures (one per week) and the treatment as usual group completed five CES-D measures (one every other week). In Tables 2 and 3, the shaded areas show when the measures were administered.

Table 2

*Experimental Group Data Collection Schedule*

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<th>10</th>
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<td>BASC-2-PRS</td>
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Note. DC = data collected.

Table 3

*Treatment as Usual Group Data Collection Schedule*

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<td>DC</td>
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<tr>
<td>BASC-2-PRS</td>
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</table>

Note. DC = data collected.
Delivery of the Experimental Group and the Treatment as Usual Group

The groups were scheduled to begin on a pre-determined start date. The school psychologist, school psychology intern, and a school counselor co-facilitated the groups. They were responsible for starting and ending the groups on time and for administering the group curriculum. The groups were always held on the same day of the week. However, delivery of the group functioned on a rotating schedule. For example, the first session of the experimental group was held during first period and the first session of the treatment as usual group was held during second period. Then, during the following week, the second session of the experimental group was held during second period and the treatment as usual group did not meet. During the third week, the experimental group met during third period and the treatment as usual group met during fourth period. This design was selected so students did not miss the same class each week. The experimental group met once every week for 50 minutes for ten weeks. The treatment as usual group met once every other week for 50 minutes for ten weeks.

Independent Variables

Experimental group.

The Adolescent Coping with Depression Course (CWD-A; Clarke et al., 1990) is a psychoeducational, cognitive-behavioral group intervention for adolescent depression. The CWD-A program includes a leader’s manual and a teen workbook that are designed to be implemented across sixteen two-hour sessions held twice a week over eight weeks (Clarke et al.). The program was created as an after-school program, but the authors noted that it can be modified for several different environments and uses. Skills taught as
part of the CWD-A course include relaxation techniques (i.e., deep breathing and progressive muscle relaxation), pleasant event scheduling to increase reinforcing activities, minimizing negative thoughts (i.e., all or nothing thinking, overgeneralization, personalization, disqualifying the positive, etc.), social skills training (i.e., body language, conversation starters, eye contact, etc.), effective communication (i.e., minimizing mind reading, reciprocal conversations, body language, etc.), and problem-solving (i.e., how to identify and evaluate the problem, brainstorm solutions, weigh advantages and disadvantages to solutions, decide on a solution, and evaluate the decision). The teen workbook supplements the lessons with readings, learning tasks, self-monitoring forms, homework assignments, and quizzes. Rules, guidelines, and the rationale are parts of the first session and then subsequent sessions teach specific skills. The goal of the CWD-A intervention is for adolescents to learn new skills to help them gain control over their moods and deal with situations that contribute to their depression. The authors also created a parent component to the intervention. However, for the purposes of this study, the parent component was not used because the intervention occurred during the school day. For the purposes of this study, the CWD-A was modified to ten sessions, one per week, for fifty minutes each versus the original intervention, which was sixteen sessions, two per week, for two hours each. Table 4 shows the modified version of the CWD-A sessions and order across the ten-week experimental group.
Table 4

*The Modified CWD-A Sessions*

1. Session 1: Depression and Social Learning
2. Session 2: Self-Observation and Change
3. Session 8: Relaxation
4. Session 4: Learning How to Change
5. Session 6: The Power of Positive Thinking
6. Session 7: Disputing Irrational Thinking
7. Session 9: Communication, Part 1 (with parts of Session 10: Communication, Part 2)
8. Session 11: Negotiation and Problem Solving, Part 1
9. Session 12: Negotiation and Problem Solving, Part 2
10. Session 16: Prevention, Planning, and Ending (with parts of Session 15: Life Goals)

The way the CWD-A was altered is discussed in the following paragraphs. First, the CWD-A authors noted that when altering the curriculum, Session 1 must remain because they felt that it was a necessary component to the intervention. Therefore, Session 1 was included in the ten sessions. Additionally, the CWD-A curriculum was altered by providing one example when there were two or more examples, eliminating the break incorporated into each session, and reducing time allotted for activities, such as reviewing homework, assigning homework, discussions, and sharing. It is important to note that this did not mean eliminating activities, just reducing the time for the components in a session.

Further, the following sessions were altered in the following ways. Sessions 3 and 8 are very similar. Session 3 targets social skills training, such as meeting new
people, introducing people to one another, and relaxation techniques. Session 8 focuses on building skills for youth to create friendships and teaching relaxation techniques. Due to the repetition of these sessions, Session 8 was retained due to the advanced nature of the social skills and Session 3 was eliminated. Session 8 was moved to Session 3 because of the way the skills taught in the CWD-A build on relaxation skills taught early in the sessions.

Session 5 is a review of skills taught in Sessions 1 to 4. Therefore, this review was eliminated. Sessions 9 and 10 were combined because Session 10 provides practice opportunities for the skills taught in Session 9. Sessions 13 and 14 were eliminated for adaptation into the schools because they are a joint adolescent and parent group.

Session 15 involves long term planning (i.e., goals for friends, career, etc.). Session 15 was combined with Session 16 (prevention, planning, and ending).

The school psychologist, school psychology intern, and a school counselor were the group co-facilitators and the data collectors for the modified CWD-A group. The school psychology intern also is the author of this dissertation. It is important to note that this is a limitation of the study because the experimenter had knowledge of the hypotheses of the study. This limitation is discussed further in Chapter V. In addition to co-facilitating the group, the school psychologist was present to ensure the modified CWD-A was implemented according to the protocol to ensure treatment integrity. To do this, the school psychologist followed along in the treatment manual to guarantee the protocol was implemented as intended. The school psychologist interjected during the group sessions as needed to ensure treatment integrity and debriefed with the school
psychology intern immediately following the sessions to address any concerns regarding the implementation of the intervention. The school psychology intern applied these recommendations to future sessions and the school psychologist continued to provide positive and constructive feedback as necessary.

**Treatment as usual group.**

The treatment as usual group received a coping skills/problem solving curriculum developed by Ann Vernon (1998). This curriculum consisted of five sessions designed for children in grades six through eight. The school counselors used components of the curriculum as a part of their school services prior to implementing this intervention. This curriculum was selected because it was considered treatment as usual in this rural school district and it was common for school counselors to use components of this curriculum with children experiencing internalizing concerns. The following modules were administered every other week in the following order starting with Session 1: “Rational Reasoning,” “Like a Yo-Yo,” “Domino Effect,” “Pain Relievers,” and “Salient Solutions.” The author of the curriculum asserted that the lessons were designed to teach positive mental health concepts and to help students cope with situational and developmental problems. Each lesson included a statement about a developmental perspective, objects, step-by-step lesson, and questions. At the time this research paper was written, no known research existed on Ann Vernon’s curriculum. Searches using pertinent title, author, and subject information were conducted in Kent State University’s Research Databases and Google Scholar. Papers were found that were descriptive in nature. For example, the papers described the curriculum developed by Vernon and
discussed her theoretical views. However, no research-oriented papers using this curriculum were found.

In the present study, the school psychologist, school psychology intern, and school counselor were also the group co-facilitators and the data collectors for the treatment as usual group. Again, the school psychology intern was also the experimenter (see further discussion on this in Chapter V). It is important to note that this is a limitation of the study because the experimenter had knowledge of the hypotheses of the study. In addition to co-facilitating the group, the co-facilitators were present to ensure the modified CWD-A was implemented according to the protocol.

**Additional Variables**

In general, school factors were data that the school district collects district-wide for every student enrolled. This data was a part of the district’s school-based mental health database. The additional variables collected were each participant’s gender, age, average grade, and total number of discipline events during the school year. These additional variables were termed “covariates” because covariates are variables that are believed to contribute to understanding and explaining the dependent variable.

**Progress Monitoring**

The CES-D (Radloff, 1977) is a twenty item self-rating scale that students completed pre-intervention, post-intervention, and at the end of every group session (for both experimental and treatment as usual groups). The CES-D was used as a progress monitoring tool to alert the group facilitators to changes in participants’ depressive
symptoms. Scores on this measure assisted in determining if participants displayed clinical signs of depression and needed more intensive interventions.

If a student was in need of more intensive interventions, the school psychologist and school psychology intern immediately met with the student one-on-one in a private location to discuss the concerns. If the student expressed suicidal ideations or homicidal ideations, a safety contract was created and the student was escorted to the principal/assistant principal and referred for intensive intervention services (see Appendix D). The principal/assistant principal immediately contacted the student’s parent(s)/guardian(s) to come to the school to discuss the intensive intervention services. If the principal/assistant principal had concern(s) that the child was at-risk for harming him/herself or another person and parent(s)/guardian(s) did not have plans to immediately seek assistance for the student, an ambulance would be called (district policy; see Appendix D). Additionally, the school psychologist and school psychology intern followed the school district policies (see Appendix D). If a student were referred for intensive services, this student would be considered not appropriate for the groups because they would have moved from an at-risk stage of depression to a clinical stage of depression. Therefore, the student would be excluded from the groups once he/she had been referred for intensive services.

Pre-Intervention and Post-Intervention Data Collection

The BASC-2 Teacher Rating Scales (BASC-2-TRS) and the Parent Rating Scales (BASC-2-PRS) were used to measure the social-emotional functioning of students
pre-intervention and post-intervention for both experimental and treatment as usual groups. The BASC-2-TRS was sent to each student’s teacher team leader through campus mail in a confidential envelope to complete with his/her other teachers at the next team meeting. The teacher team leader returned the BASC-2-TRS to the school psychologist and school psychology intern through campus mail in a confidential envelope. The BASC-2-PRS was sent to the student’s parent(s)/guardian(s) through the mail. An envelope was provided for them to return the rating scales to the school psychologist and school psychology intern. For data collection purposes, only the T-score from the “withdrawal” subscale on the teacher (BASC-2-TRS-W) and parent (BASC-2-PRS-W) ratings scales was used. As previously stated, these abbreviations (BASC-2-TRS-W and BASC-2-PRS-W) refer to the specific “withdrawal” subscale on the BASC-2.

**Post-Intervention Services**

Since the school district determined that the experimental group was more effective than the treatment as usual group, the treatment as usual group participants were offered the experimental group. The group facilitators remained the school psychologist, school psychology intern, and school counselor. Information collected during this phase of intervention is not included in the present study.

**Database**

Data for the proposed study was created and maintained in Microsoft Excel by the school psychologist and school psychology intern. The data collected from the instruments were entered into the database. The procedure and use of this database was
approved by the Kent State University’s Institutional Review Board and the school district for the researcher’s use (see Appendix E). When this database was released to the researcher, it was anonymous and excluded any identifying information so that subjects were not able to be identified, directly or through identifiers linked to the subjects. The database was then explored for outliers and/or missing data prior to analysis.

**Hypothesis**

The null hypothesis was that there would be no statistically significant differences in test scores between the experimental group and treatment as usual group following the interventions. The null hypothesis was the default hypothesis and an appropriate hypothesis for the present study because it was possible that a Type II Error would occur because of the sample size and the power needed to detect a difference. Additionally, the null hypothesis was rational because the literature revealed differing effects for preventing depression in at risk group and because the null hypothesis demonstrated the unbiased position of this researcher with respect to a significant change being made as the result of the intervention. For these reasons, the null hypothesis was the default hypothesis for all three research questions.

**Research Questions**

**Research Question 1**

Did participants included in the modified CWD-A intervention have differing scores on four pretest/posttest rating scales (BASC-2-PRS-W, BASC-2-TRS-W, BDI-Y, and CES-D) when compared to the treatment as usual group?
Hypothesis (Ho): There were no differences between the experimental and the treatment as usual group on pretest/posttest rating scales (BASC-2-PRS-W, BASC-2-TRS-W, BDI-Y, and CES-D).

Research Question 2

Did the dependent scores collected from the participants in the experimental and treatment as usual group significantly change when the covariates (i.e., gender and age, average grade, and number of discipline referrals in a school year) were controlled?

Hypothesis (Ho): The covariates did not control for the outcomes on the dependent scores.

Research Question 3

Did participants included in the modified CWD-A intervention have differing scores on an ongoing time series measure (CES-D) when compared to the treatment as usual group?

Hypothesis (Ho): There were no differences between the experimental and treatment as usual group on the time series measure (CES-D).
CHAPTER IV

RESULTS

Introduction

This chapter explains the data analysis for the present study. The data analysis included an informal visual analysis, descriptive statistics, inferential statistics, a trend analysis, correlations, and a power analysis. Therefore, the chapter begins with a description of obtaining the data and proceeds into a general explanation of what the data was anticipated to show (informal visual analysis). Next, the researcher addresses descriptive information about the data followed by a discussion of the assumptions relevant to inferential statistics. Finally, the researcher discusses the inferential statistics, trend analysis, and correlations that were conducted to interpret the data.

Data Analysis

Data were provided in Microsoft Excel and entered into Statistical Package for the Social Sciences, 15.0.1 version (SPSS; SPSS Inc., 2006). SPSS is a statistical program used for analyzing data.

Informal Visual Analysis

Boxplots are frequently used as informal exploratory analysis procedures prior to formal analysis as a way of determining possible statistical differences. Boxplots are types of graphs that help to demonstrate the shape of distributions, the measure of central tendency, and data variability (SPSS Inc., 2006). Boxplots represent the middle 50% of the data (second and third quartiles) by the length of their boxes. The difference between
the extreme ends of their whiskers is the range of the data (if no outliers exist).
Additionally, the boxes are normally represented with a line in the box noting the median of the data. A median that is not centered in the box demonstrates a skewed data distribution (Bruning & Kintz, 1997).

Boxplots were used to help visually and informally summarize the dependent interval level data. Boxplots for the pre-test and post-test BDI-Y, CES-D, BASC-2-TRS-W, and BASC-2-PRS-W suggested that the scores on the CES-D were much lower than the scores on the other measures. However, this could be expected, as the CES-D is reported in raw form and the other scales were T-scores. No large differences were observed among the pre-test and post-test BDI-Y, BASC-2-TRS-W, and BASC-2-PRS-W as the medians appeared close and the whiskers overlapped. This informal analysis suggested that no significant formal contrast differences would likely exist between the post-test T-score measures.

Boxplots for the CES-D progress monitoring scores indicated that for the group, the median appeared to vary little over the ten weeks of data. For individual boxplots, the median in some boxes was not centered; therefore, the data was skewed for several weeks. The boxes in some boxplots were wider (end to end) than others, demonstrating a difference in the spread or variability of scores. Whiskers that extended beyond the boxes were 1.5 times the width of the box. Boxes that had Y axis values shared or similar suggested that no significant differences between the scores existed. Thus, it was likely that significant differences may not be found when formal statistical analysis is performed.
Descriptive Statistics

For both the experimental and treatment as usual groups, the mean age was twelve years of age and the mean grade was sixth grade. Ages ranged from ten years to fifteen years of age. Using the Kruskal-Wallis, a statistical tool used for determining equality of populations, age was not statistically different between groups (SPSS Inc., 2006; \( p = 0.79 \)). Low socio-economic status was determined by enrollment in a free and reduced lunch program. For both the experimental and treatment as usual groups, 46\% of participants were considered of low socio-economic status. Using the Kruskal-Wallis, socio-economic status was not statistically different between groups (SPSS Inc.; \( p = 0.47 \)). In the experimental and treatment as usual groups, 41\% were female and 59\% were male.

Frequency counts, measures of central tendency, measures of variability, and measures of normality were used to describe the data collected (SPSS Inc., 2006). Table 5 contains the mean, standard deviation, and number of participants included for the pre-test and post-test BDI-Y, CES-D, BASC-2-TRS-W, and BASC-2-PRS-W, separated by the experimental and treatment as usual group. Table 6 contains the mean, standard deviation, and number of participants for each CES-D progress monitoring measure, separated by the experimental and treatment as usual group.

Central tendency.

Central tendency refers to the mean, median, and mode for a set of scores in a distribution of scores (SPSS Inc., 2006). Central tendency is a way to generalize about all scores in the distribution (SPSS Inc.). However, the mean is not always the value that
is most representative of the data’s central tendency (Bruning & Kintz, 1997). For example, if the data is skewed, the median is then the value that is most representative of the data. When data is skewed, it means that the mean is not in the middle of the distribution; therefore, the distribution may not appear and may not mathematically qualify as a traditional bell or normal curve. As discussed in the informal visual analysis, some of the data represented by the boxplots appeared skewed. Therefore, the median was included in Tables 5 and 6 in addition to the mean.

**Variability.**

Variability refers to the extent to which the data varies (SPSS Inc, 2006). Measures of variability include the range, variance, and standard deviation. Tables 5 and 6 show information regarding the standard deviation.
Table 5

*Descriptive Data for Pre/Post BDI-Y, CES-D, BASC-2TRS-W, and BASC-2PRS-W*

<table>
<thead>
<tr>
<th>Group</th>
<th>Measure</th>
<th>M</th>
<th>Median</th>
<th>SD</th>
<th>n</th>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td>BDI-Y (Pre)</td>
<td>57.18</td>
<td>53.00</td>
<td>9.80</td>
<td>11</td>
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<tr>
<td></td>
<td>BDI-Y (Post)</td>
<td>55.27</td>
<td>54.00</td>
<td>10.87</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>CES-D (Pre)</td>
<td>20.18</td>
<td>21.00</td>
<td>9.38</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>CES-D (Post)</td>
<td>11.00</td>
<td>10.00</td>
<td>7.82</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>BASC-2-TRS-W (Pre)</td>
<td>59.45</td>
<td>60.00</td>
<td>4.41</td>
<td>11</td>
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<tr>
<td></td>
<td>BASC-2-TRS-W (Post)</td>
<td>63.55</td>
<td>59.00</td>
<td>11.52</td>
<td>11</td>
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<tr>
<td></td>
<td>BASC-2-PRS-W (Pre)</td>
<td>66.36</td>
<td>64.00</td>
<td>15.87</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>BASC-2-PRS-W (Post)</td>
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<td>11</td>
</tr>
<tr>
<td><strong>Treatment As Usual</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>BDI-Y (Pre)</td>
<td>49.73</td>
<td>50.00</td>
<td>8.64</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>BDI-Y (Post)</td>
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<td>47.00</td>
<td>8.19</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>CES-D (Pre)</td>
<td>18.64</td>
<td>17.00</td>
<td>8.08</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>CES-D (Post)</td>
<td>10.55</td>
<td>8.00</td>
<td>7.70</td>
<td>11</td>
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<tr>
<td></td>
<td>BASC-2-TRS-W (Pre)</td>
<td>70.91</td>
<td>63.00</td>
<td>16.97</td>
<td>11</td>
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<tr>
<td></td>
<td>BASC-2-TRS-W (Post)</td>
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<td></td>
<td>BASC-2-PRS-W (Pre)</td>
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<td>11</td>
</tr>
<tr>
<td></td>
<td>BASC-2-PRS-W (Post)</td>
<td>57.67</td>
<td>57.50</td>
<td>9.83</td>
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### Table 6

**Descriptive Data for CES-D Progress Monitoring Scores**

<table>
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<th>CES-D Week</th>
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<th>M</th>
<th>Median</th>
<th>SD</th>
<th>n</th>
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</thead>
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</tr>
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<td>1</td>
<td>TAU*</td>
<td>12.00</td>
<td>13.00</td>
<td>6.18</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>Experimental</td>
<td>17.82</td>
<td>18.00</td>
<td>9.87</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>TAU</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Experimental</td>
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<td>8.05</td>
<td>11</td>
</tr>
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<td>3</td>
<td>TAU</td>
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<td>9.00</td>
<td>7.41</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
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<td>13.00</td>
<td>11.54</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>TAU</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Experimental</td>
<td>11.36</td>
<td>13.00</td>
<td>6.82</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>TAU</td>
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<td>16.00</td>
<td>11.36</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
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<td>12.00</td>
<td>5.54</td>
<td>11</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Experimental</td>
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<td>6.00</td>
<td>6.59</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>TAU</td>
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<td>10.00</td>
<td>13.25</td>
<td>11</td>
</tr>
<tr>
<td>8</td>
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<td>9.00</td>
<td>7.22</td>
<td>11</td>
</tr>
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<td>8</td>
<td>TAU</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Experimental</td>
<td>12.91</td>
<td>9.00</td>
<td>8.78</td>
<td>11</td>
</tr>
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<td>9</td>
<td>TAU</td>
<td>12.09</td>
<td>13.00</td>
<td>8.30</td>
<td>11</td>
</tr>
<tr>
<td>10</td>
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<tr>
<td>10</td>
<td>TAU</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Treatment As Usual (TAU)
Research Question 1 and Research Question 2: Inferential Statistics

Assumptions for inferential statistics.

Inferential statistics were used to answer research question 1 and research question 2. In order to use inferential statistics, statistical assumptions must be met. The assumptions for inferential statistics are independent measures, score normality, and homogeneity of variance between score sets. Independence refers to the independence of observations which means it is the extent to which one participant’s score is not influenced by another participant’s score. Normality means that the scores are normally distributed. As discussed further below, the Anderson-Darling test was used to test for normality because more weight is applied at both tails of the distribution which assists in detecting abnormal scores. Homogeneity of variance is the extent to which the variance on the dependent variable is the same across the score sets being contrasted. As discussed further below, Levene’s test for homogeneity of variance was used to confirm homogeneity of variance. Homogeneity of variance is the extent to which score sets are not statistically different with respect to variance.

Independence. Since participation was anonymous and because students completed rating scales independently at the beginning of every session, it is believed that independence of observations was met.

Normality. The general linear model assumes data are normally distributed. Normality refers to the degree data are distributed as a symmetrical curve (SPSS Inc., 2006). The Anderson-Darling Normality test was used to explore the data. Normality for each of the four measures, both pre-test and post-test, are discussed. The null hypothesis
of this test is that data are normally distributed. The null is rejected when the alpha probability levels exceeded 0.05. When the alpha probability level is less than 0.05, the data are not normally distributed. For the BDI-Y, the data was normally distributed both pre-test ($p=0.62$) and post-test ($p=0.60$). For the CES-D, the data was normally distributed for the pre-test ($p=0.81$) and normally distributed for the post-test ($p=0.24$). For the BASC-2-TRS-W, the data was not normally distributed for the pre-test ($p=0.01$) but was normally distributed for the post-test ($p=0.26$). For the BASC-2-PRS-W, the data was normally distributed for the pre-test ($p=0.30$) and for the post-test ($p=0.64$).

**Homogeneity of variance.** The general linear model assumption of homogeneity of variance (also called homoscedasticity) is that the variance is not statistically different when two or more data sets are contrasted (SPSS Inc., 2006). To explore this assumption, Levene’s Test of Equality of Error Variances was used. The null hypothesis of this test is that data pairs have homogeneity. The null is rejected when the alpha probability levels exceeded 0.05. When the alpha probability level is less than 0.05, the data sets are not homogeneous. For the BDI-Y, the assumption was met ($p=0.91$). For the CES-D, the assumption was met ($p=0.94$). For the BASC-2-TRS-W, the assumption was violated ($p=0.00$). For the BASC-2-PRS-W, the assumption was met ($p=0.41$). Next, the author discusses issues related to the violations of the statistical assumptions.

**Assumptions for inferential statistics conclusion.**

Assumptions are important to the best practice of statistics. However, meeting all assumptions is frequently difficult in applied research. Some statistical assumption violations are regarded as not serious (Stevens, 1999). Most researchers have asserted
that the ANCOVA is robust and violations to normality or homogeneity of variance do not significantly impact the results of the analysis of data (Craighead & Nemeroff, 2004; Stevens; Wildt & Ahtola, 1978). This finding holds stronger when groups are equal, as the case with the present study (Craighead & Nemeroff; Stevens; Wildt & Ahtola). Exceptions to the ANCOVA being robust to statistical violations are when independence is violated or when two or more assumptions are violated at the same time (Craighead & Nemeroff; Stevens). However, the more conservative approach is to use non-parametrics to analyze the data.

Normality was met for all measures except the BASC-2-TRS-W. Homogeneity of variance was met for all measures except the BASC-2-TRS-W. Therefore, an ANCOVA was an appropriate analysis for the BDI-Y, CES-D, and the BASC-2-PRS-W. An alternative non-parametric analysis was used to analyze the BASC-2-TRS-W since two assumptions for the ANCOVA were violated for this measure.

To answer research questions 1 and 2, the researcher will begin by discussing the ANCOVA used for the analysis of the BDI-Y, the CES-D, and the BASC-2-PRS-W. Then, the researcher will discuss the non-parametric analysis used to analyze the BASC-2-TRS-W.

**Research Question 1 and Research Question 2: Two-Way Analysis of Covariance (ANCOVA)**

Research question 1 and research question 2 can both be answered by conducting a Two-Way Analysis of Covariance (ANCOVA). Therefore, both of these research
questions will be discussed in this section. The following were research question 1 and research question 2:

**Research question 1.**

Did participants included in the modified CWD-A intervention have differing scores on four pretest/posttest rating scales (BASC-2-PRS-W, BASC-2-TRS-W, BDI-Y, and CES-D) when compared to the treatment as usual group?

Hypothesis (Ho): There were no differences between the experimental and the treatment as usual group on pretest/posttest rating scales (BASC-2-PRS-W, BASC-2-TRS-W, BDI-Y, and CES-D).

**Research question 2.**

Did the dependent scores collected from the participants in the experimental and treatment as usual group significantly change when the covariates (i.e., gender and age, average grade, and number of discipline referrals in a school year) were controlled?

Hypothesis (Ho): The covariates did not control for the outcomes on the dependent scores.

**Two-way analysis of covariance (ANCOVA).**

To address research question 1 and research question 2 for the BDI-Y, CES-D, and the BASC-2-PRS-W, a parametric analysis was used in this study because the data are interval level and independently measured. The assumption of random sampling was met using a conveniently sampled group of subjects, with random assignment to one of two groups (treatment as usual or experimental conditions).
One type of parametric general linear model analysis is a two-way Analysis of Covariance (ANCOVA), which is a statistical model that is used to examine the difference(s) between one dependent variable with two or more independent variables. When research designs incorporate two or more independent variables, the independent variables are called factors, and the statistical designs are called factorial designs. Factorial designs are designated according to how many independent variables are being investigated and by how many different levels are within each factor. While a one-way analysis of variance measures significant effects of one factor only, a two-way ANCOVA measures the effects of two factors simultaneously.

A two-way ANCOVA is used to examine not only the difference(s) when there are two or more treatment conditions but also the statistical interactions of those treatment conditions as they impact the dependent variable. Therefore, to answer research question 1, a two-way ANCOVA is an appropriate analysis model because within the first research question of this study, there are two factors for the assessments (BDI-Y, BASC-2-PRS-W, and the CES-D). For the purposes of this study, the two factors were: (a) treatment as usual versus experimental conditions and (b) pre/post conditions. Therefore, the appropriate analysis was three fold: (a) 2x2 ANCOVA where the dependent variable was scores on the BDI-Y; (b) 2x2 ANCOVA where the dependent variable was scores on the BASC-2-PRS-W; and (c) 2x2 ANCOVA where the dependent variable was scores on the CES-D. The analysis produced main effects for each of the two factors (treatment as usual/experimental and pre/post conditions) and the interactions of these two factors with the dependent variable (see Table 7).
Research question 2, regarding covariates, can be answered in conjunction with the analysis for research question 1. This paragraph details the analysis for research question 2. For the purposes of the two-way ANCOVA, additional variables were termed “covariates.” The covariates were added to the analysis to determine if the analyzed dependent variable, assessment scores, was significantly impacted by the covariates in such a way that the covariates impacted the relationship between the factors and the dependent variable. The additional variables, termed “covariates,” were: gender, age, average grade, and total number of discipline referrals. Since these variables were entered into the analysis as a part of answering the first research question, the appropriate tool was the two-way Analysis of Covariance (ANCOVA). The results of the ANCOVAs for the BDI-Y, CES-D, and BASC-2-PRS-W are reported below followed by the non-parametric analysis for the BASC-2-TRS-W. The researchers of the present study established an alpha level of 0.05 to 0.00 as significant. To interpret the BDI-Y, CES-D, and BASC-2-PRS-W, the significance of interaction within each ANCOVA was first examined, followed by the main effects. A description for these analyses follows.

**Results: 2x2 ANCOVA for the BDI-Y.** There were no statistical interactions for the BDI-Y (F [1, 36] = 0.24, p = 0.63). Table 7 shows the results of the two-way ANCOVA analysis for the BDI-Y. The BDI-Y was further examined for main effects. The only significant main effect for between subjects was for the experimental versus treatment as usual group (F [1, 36] = 4.95, p = 0.03). The post-hoc analysis demonstrated that the experimental group had a significantly higher mean ($M = 55.23, SE = 2.06$) on the post-test BDI-Y than the treatment as usual group ($M = 48.41, SE = 2.06$).
The next analysis of the BDI-Y was to examine the effects of the covariates (research question 2). There was statistical significance with the covariate “discipline” (F [1, 36] = 4.76, p = 0.036). The post-hoc analysis demonstrated that the experimental group had significantly more discipline referrals than the treatment as usual group (experimental group $M = 30$; treatment as usual group $M = 12$). When, however, the discipline covariate was regressed with the dependent BDI-Y variable, the correlation was significant but of little practical value. The Spearman rho coefficient was 0.32 (n = 22, $p = 0.03$) with a coefficient of determination value of 0.10, making this covariate of little or no practical significance as it indicated that the overlap between the dependent measure (BDI-Y) and the covariate (discipline) was approximately 10%. Therefore, discipline as a covariate had no practical importance in interpreting the main effect means.

**Results: 2x2 ANCOVA for the BASC-2-PRS-W.** There were no statistical interactions for the BASC-2-PRS-W (F (1, 27) = 0.94, $p = 0.34$). Table 7 shows the results of the two-way ANCOVA analysis for the BASC-2-PRS-W. The BASC-2-PRS-W was further examined for main effects. There was one significant main effect for the pre-test verses post-test contrast when the experimental and treatment as usual groups were collectively examined (F [1, 27] = 6.88, $p = 0.01$). The pre-test mean of 64.67 (SE = 2.37) was contrasted with the post-test mean of 54.29 (SE = 3.12). The post-test mean was significantly lower. No covariates were significant (research question 2).
Results: 2x2 ANCOVA for the CES-D. There were no statistical interactions for the CES-D (F [1, 36] = 0.05, p = 0.83). Table 7 shows the results of the two-way ANCOVA analysis for the CES-D. The CES-D was further examined for main effects. The only significant main effect for between subjects was for pre-test (M = 19.41, SE = 1.81) verses post-test (M = 10.77, SE = 1.81) results (F [1, 36] = 11.43, p = 0.00) when the groups were examined. There were no statistically significant covariates (research question 2).
Table 7

Two-Way Analysis of Covariance for BDI-Y, CES-D, and BASC-2-PRS-W

<table>
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<tr>
<th>Variables</th>
<th>Sum of Squares</th>
<th>df</th>
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<th>Sig.</th>
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<td>117.40</td>
<td>1</td>
<td>0.97</td>
</tr>
<tr>
<td>BASC-2-PRS-W Covariate</td>
<td>Discipline</td>
<td>450.06</td>
<td>1</td>
<td>3.70</td>
</tr>
</tbody>
</table>

* *p < 0.05. ** *p < 0.01.
Rank transformation ANCOVA: BASC-2-TRS-W.

Since the assumptions for a parametric factor analysis of covariance were not met for the BASC-2-TRS-W, a non-parametric analysis was implemented to finish answering research question 1. The Friedman two-way Analysis of Variance (ANOVA) was considered because there are fewer statistical assumptions required for this nonparametric analysis tool than for the parametric general linear model. However, the literature suggested performing a Rank Transformation ANCOVA (RT-ANCOVA) when more than one assumption for the ANCOVA is violated because it is a solution that accommodates covariates in a nonparametric analysis (Maxwell, Delaney, & Callaghan, 1993; Quade, 1967). Conover and Iman (1981, 1982), Maxwell, Delaney and Callaghan, Olejnik and Algina (1984), and Quade reported that the parametric ANCOVA was robust to violations of either normality or homoscedasticity. However, when both assumptions were violated, the observed alpha levels underestimated the nominal alpha level when sample sizes were small. The use of a RT-ANCOVA led to a liberalized test solution for violations of the statistical assumptions needed for a parametric ANCOVA (Conover & Iman; Maxwell, Delaney, & Callaghan; Olejnik & Algina). A RT-ANCOVA refers to the replacement of data by their ranks, with a subsequent analysis using the usual ANCOVA procedures. The analysis is calculated on the ranks rather than on the original data. RT-ANCOVA procedures have been shown to have properties of robustness and power in both regression and analysis of variance (Conover & Iman; Maxwell, Delaney, & Callaghan; Olejnik & Algina; Quade).
McSweeney and Porter (1971) are documented in the literature as presenting the clearest RT-ANCOVA technique (Maxwell, Delaney, & Callaghan, 1993). The first step in this technique is to rank the dependent variable and the covariates from 1 to $N$. Then, a parametric ANCOVA is performed on the ranks. The $F$ value is then compared to a critical $F$ value with $a – 1$ and $N – a – 1$ degrees of freedom. The McSweeny and Porter RT-ANCOVA technique was used for the purposes of this study.

Since both normality and homogeneity of variance were assumptions that were violated for the BASC-2-TRS-W, a RT-ANCOVA was performed. Results of the RT-ANCOVA suggested that no significant differences were present for the BASC-2-TRS-W.

**Research Question 3: Trend Analysis**

To answer the third research question, a trend analysis was used. The following was research question 3:

**Research question 3.**

Did participants included in the modified CWD-A intervention have differing scores on an ongoing time series measure (CES-D) when compared to the treatment as usual group?

Hypothesis (Ho): There were no differences between the experimental and treatment as usual group on the time series measure (CES-D).

**Trend analysis.**

A trend analysis, used to answer research question 3, is an analysis of dependent variable changes over a defined time period. When an experiment contains an
independent variable, the shape of the function that relates the levels of the independent variable to the dependent variable over time is frequently of interest. Trend analysis is a statistical tool used to fit a general trend model to time series data and, subsequently, to provide forecasts. Trend analysis may be linear, quadratic, exponential growth or decay, and S-curve models. For the purposes of the trend analysis for this study, the dependent variable was students’ scores on the CES-D (from both the experimental and treatment as usual groups) and the analysis was quadratic because an informal visual analysis revealed that the relationship between the independent and dependent variables was not linear. Student’s median scores were used so outliers or extreme values that may have distorted the data would not impact the data.

The results of the trend analysis are below in Figures 1 and 2. Figure 1 for the experimental group showed a downward slope that in general, suggested participants’ scores decreased over time. The forecasted data points suggested that participants’ scores would remain at the bottom of the slope. Figure 2 for the treatment as usual group shows a concave pattern that, in general, participant’s scores showed slight improved mid-way through the intervention and the pre-test and post-test scores were similar. The trend analysis also forecasted future data points for the treatment as usual group. These forecasted data points suggested that participants’ scores on the CES-D would continue to increase for the treatment as usual group.

To further explore the trend analysis and to determine if the conclusions were statistically significant, a fitted line plot was completed using a quadratic polynomial regression analysis. Results revealed that the progress monitoring data for the treatment
as usual group was not statistically significant (unpredictable) with data points quite scattered. Thus, the result of the quadratic polynomial regression analysis for the treatment as usual group was insignificant \((p=0.97)\). However, the results also revealed that the progress monitoring data for the experimental group was highly predictable and the result of the quadratic polynomial regression analysis for the experimental group was significant \((p=0.00)\). Therefore, the downward slope demonstrated by the trend analysis was statistically validated as significant.

![Trend Analysis Plot for CESDMedianExp](image)

**Figure 1.** Trend analysis plot for the CES-D experimental group.
Correlations

Results for the two-way ANCOVA for the BDI-Y (research question 1) and results of the trend analysis for the CES-D (research question 3) demonstrated disparate results for the experimental and treatment as usual groups. Therefore, a correlation was conducted to determine if the two measures (BDI-Y and CES-D) correlated. In theory, both instruments should correlate because they assert to measure the same thing, symptoms of depression. Results for the correlation were reported using the coefficient of determination (square of the correlation coefficient), a value that indicates the amount of common space (statistical variance) shared by the variables being correlated. For example, when two variables highly correlate, the amount of space in a Venn diagram they share should be very high. The correlation coefficient should be approaching 1.00.
and the coefficient of determination approaching 1.00. The results of the correlations are below.

The coefficient of determination for the pre-test BDI-Y and the pre-test CES-D was 0.34, and the coefficient of determination for the post-test BDI-Y and the post-test CES-D was 0.26. These values indicated that the variables, BDI-Y and the CES-D, overlapped between 34% and 26%. This value is low for two instruments that assert to measure similar constructs.

**Power Analysis**

A power analysis is the probability of identifying a significant difference when one truly exists. Power changes as the difference between the groups change. Meaning that the more difference, the greater the power. One risk of having too small of a sample size is that a researcher could commit a Type II error, failure to detect a difference when a difference existed. A power analysis, to determine the number of participants needed for a study, is an equation that has four variables. The four variables needed to estimate sample size in a power analysis are: (a) required alpha level, (b) required minimal power level, (c) estimated standard deviation, and (d) estimated effect size. For social sciences, Cohen (1992) suggested using a significance level of 0.5 and for power, 0.80. These values are frequently used as research guides. The third variable, sample size, is typically the unknown variable to be solved because many studies are designed around the results of the power analysis.

However, in applied research, sample size is often not within the control of the researcher. Therefore, for the present applied research study, a power analysis using the
following variables was conducted: (a) required alpha level, (b) known sample size, (c) estimated standard deviation, and (d) estimated effect size. The variable this researcher solved for was power.

The fourth variable, effect size, is typically driven by previous research. However, if no previous studies have been conducted, effect size cannot be driven from previous research. Effect size in terms of power analysis should not be confused with the original term “effect size” from meta-analysis. They are different in that effect size calculations for power analysis utilizes the mean standard difference (i.e., between pre and post measures) and standard deviations. For example, effect size is the difference in means (numerator) between the treated and untreated groups divided by the standard deviation (denominator).

To determine the effect of the intervention in the present study (CWD-A), the researcher used the Beck Inventory, Second Edition (BDI-II), CES-D, and the BASC-2-TRS and the BASC-2-PRS. It is important to note that no study has implemented the intervention (CWD-A) in the schools and no other study has adapted the intervention the way the researcher in this study did. This is important because to calculate the power analysis, the researcher used the effect size from previous studies that implemented the CWD-A intervention but did not implement it in the same way as this study did. Therefore, the data used to calculate the power analysis is a reasonable guide rather than a known variable. Data from Clarke, Rhode, Lewinsohn, Hops, and Seeley (1999) was used to determine the effect size for the BDI-Y, and data from Clarke and Hawkins (1995) was used to determine the effect size for the CES-D. No previous
studies used the BASC-2-TRS or BASC-2-PRS. Therefore, the effect size cannot be driven by the literature for this measure.

For the BDI-Y, Clarke and Hawkins (1995) found that the experimental group BDI-Y mean post test results were equal to 10.1 (SD=9.1), the treatment as usual group BDI-Y mean post test results were equal to 16.0 (SD=11.2), and the difference between the means was 5.9. When these variables were entered into the power analysis equation and the unknown variable was sample size, sample size was equal to 39. This means that 39 subjects were needed for each group.

For the CES-D, the experimental group CES-D mean post test results were equal to 17.88 (SD=9.3), the treatment as usual group CES-D mean post test results were equal to 21.67 (SD=12.3), and the difference between the means was 3.79. When these variables were entered in the power analysis equation and the unknown variable was sample size, sample size was equal to 96. This means that 96 subjects were needed for each group. It is important to note that a power analysis for the BASC-2-TRS and BASC-2-PRS could not be calculated because there was no previous literature with the intervention to drive the difference between the means and the standard deviation.
CHAPTER V
DISCUSSION

Review of the Research Problem and Rationale

There is limited research that has explored school-based mental health systems as a preventative service delivery model. Even less research has explored targeted and intensive level evidence-based interventions that are effective within the school environment. Further, the majority of children in need of school-based mental health services have experienced symptoms of depression, but few evidence-based interventions targeting these children have been empirically evaluated in school settings (Clarke et al., 1995; Farmer & Farmer, 1999; Herman et al., 2004; Promising Practices Network, 2008). One CBT intervention that has shown promise is the Adolescent Coping with Depression Course (CWD-A; Clarke, Lewinsohn, & Hops, 1990). However, the literature revealed two separate theories regarding the success of the CWD-A with an at-risk for depression group, and no study explored altering the CWD-A curriculum to adapt to the school environment.

There are several reasons why it was imperative that the effectiveness of the CWD-A for children at-risk for depression be researched for implementation in the schools. First, Herman et al. (2004) listed several barriers school psychologists have faced in developing preventative mental health interventions: (a) inconsistent findings for depression prevention, (b) limited transportability or cost effectiveness, (c) sociocultural aspects of depression have been ignored, and (d) most prevention trials have focused on individual interventions. This study addressed three out of four of Herman et al.’s
concerns (a, b, and d above). Further, Farmer and Farmer (1999) asserted that few, if any, researchers approached the school as the target of the intervention versus using schools as a site for intervention (i.e., Clarke et al., 1995). Meaning, in previous research, schools served as a convenient location to assemble a group of adolescents versus using schools as a part of the theory in developing the intervention. This study addressed this concern in the literature as well. Therefore, implementing the CWD-A in the school setting and adapting the program to meet the needs of the school district’s schedule during the school day filled a gap in the literature.

School settings demand interventions that are cost effective and time efficient. This study aimed to investigate one intervention that has the potential to meet both needs. Preliminary research suggested that in settings other than the school, the CWD-A might be effective with children at-risk for depression (Clarke et al., 2001). Although Clarke et al. (1995) found that depressive episodes were prevented in a high school sample of children at-risk for depression, Rhode, Lewinsohn, and Seeley (1994) also explored the effects of the CWD-A on a population of children with “low severity” depression and found no program effects for adolescents with a low severity of depression symptoms. Therefore, this study added to the literature regarding effectiveness of the CWD-A with an at-risk for depression group.

Finally, according to Promising Practices Network (2008), no strong conclusions for the CWD-A can be drawn until further research was conducted utilizing an at-risk population. It is also important to note that Clarke et al. (1995) recommended outside
researchers further explore the CWD-A because researchers unaffiliated with the development of the intervention had conducted limited research.

Clearly, given the problem of school-based mental health programs and the rationale in the current literature and need for future research, a study was greatly needed that focused on further exploration of preventative school-based mental health interventions that are designed to be incorporated into the school system and are designed to target students at-risk for depression. Additionally, researchers needed to focus on promising interventions, such as the CWD-A, that have shown effectiveness in the literature.

In the present study, students were screened with measures of depression. From this pool of screened students, all students determined as at-risk for depression were eligible for this study and were then randomly assigned to two groups. One group, the experimental group, received a modified version of the CWD-A. The second group, the treatment as usual group, received a coping skills/problem solving group that consisted of five sessions from curriculum developed by Ann Vernon (1998). The treatment as usual group received the coping skills/problem solving group during the same weeks as the participants in the experimental group. However, students in the treatment as usual group received group therapy every other week. Participants in the treatment as usual group had the opportunity to participate in the more effective intervention upon the completion of the treatment as usual group. As discussed previously, no research-based papers on Vernon’s specific curriculum were found. However, papers researching school-based
Rational Emotive Behavior Therapy (REBT), the orientation of the treatment as usual curriculum, were found. As discussed earlier, there is both research that supports school-based REBT and research that opposes this based on treatment outcomes.

The present study contributes to the depression prevention literature by contributing to more consistent findings, maintaining cost effectiveness, focusing on group interventions (rather than individual interventions), utilizing the school setting as the intervention location, and contributing to the literature on the effectiveness of implementing the modified CWD-A with an at-risk for depression group.

**Review of the Research Questions**

**Research Question 1**

Did participants included in the modified CWD-A intervention have differing scores on four pretest/posttest rating scales (BASC-2-PRS-W, BASC-2-TRS-W, BDI-Y, and CES-D) when compared to the treatment as usual group?

Hypothesis (Ho): There were no differences between the experimental and the treatment as usual group on pretest/posttest rating scales (BASC-2-PRS-W, BASC-2-TRS-W, BDI-Y, and CES-D).

**Research Question 2**

Did the dependent scores collected from the participants in the experimental and treatment as usual group significantly change when the covariates (i.e., gender and age, average grade, and number of discipline referrals in a school year) were controlled?

Hypothesis (Ho): The covariates did not control for the outcomes on the dependent scores.
Research Question 3

Did participants included in the modified CWD-A intervention have differing scores on an ongoing time series measure (CES-D) when compared to the treatment as usual group?

Hypothesis (Ho): There were no difference between the experimental and treatment as usual group on the time series measure (CES-D).

Conclusions and Implications

Below, each research question is addressed in terms of the results and appropriate conclusions, followed by a discussion of the implications that can be drawn from each research question. Next, research implications and applied implications are made. Finally, the researcher has a short summary of the current study and addresses limitations and suggestions for future research.

Research Question 1 Conclusions

On the BDI-Y instrument, the treatment as usual group had a statistically significant lower mean than the experimental group. This indicated that individuals in the treatment as usual group self-reported fewer symptoms associated with depression in comparison to the experimental group. Thus, the null hypothesis was rejected for the BDI-Y because a difference between the experimental and the treatment as usual group on pretest/posttest rating scales was found. Given the lack of research on the curriculum that the treatment as usual group received, this was an important finding that significantly contributed to the literature. It is important to note that the mean for the experimental
group also decreased. This indicated that both the treatment as usual and the experimental group demonstrated improvement by self-reporting fewer symptoms associated with depression. However, the treatment as usual group showed a statistically significant difference when compared to the experimental group.

The CES-D and the BASC-2-PRS-W instruments showed that there were significant differences between participants’ pre-test and post-test scores. However, there were no significant differences between the experimental and the treatment as usual groups. Participants’ scores on both instruments decreased. On the CES-D, this indicated that participants in both the treatment as usual and the experimental group self-reported fewer symptoms associated with depression. On the BASC-2-PRS-W, this indicated that participants’ parents rated that they observed a decrease in symptoms associated with depression. The fourth instrument, the BASC-2-TRS-W revealed no significant findings. Therefore, the null hypothesis was retained for the CES-D, BASC-2-PRS-W, and the BASC-2-TRS-W. However, it is important to note that both groups were impacted positively by demonstrating a decrease in self-reported depressive symptoms and parent ratings of depressive symptoms. Although the null hypothesis was retained for this research question, the contribution to the literature was still significant as it demonstrated both interventions resulted in desirable outcomes for students at-risk for depression.

In summary of research question 1, the BDI-Y experimental group and treatment as usual group had significantly different pre-test/post-test scores and the treatment as usual group demonstrated more favorable outcomes. On the CES-D and the
BASC-2-PRS-W, both the experimental and treatment as usual groups improved. However, on the CES-D and the BASC-2-PRS-W, no significant differences between the experimental group and the treatment as usual group were found.

**Research Question 1 Implications**

The implications for research question 1 are complex as two opposing conclusions are made within the same research question. Overall, the results suggested further research is needed to make a stronger conclusion. Opposing conclusions were made because it is suspicious that on the BDI-Y, the treatment as usual group demonstrated a statistically significant difference when compared to the experimental group, but on the CES-D, no statistically significant difference existed because both were self-report measures. However, this anomaly can be easily understood by examining the extent to which both instruments do or do not correlate.

In this study, the BDI-Y and the CES-D did not have a strong correlation. Yet, the instruments asserted to measure similar constructs, depressive symptoms. Furthermore, the BDI-Y has been widely normed on children and adolescent populations; whereas, the CES-D has not been as widely explored with children and adolescents. For example, Roberts, Andrews, Lewinsohn, and Hops (1990) and Schoenbach, Kaplan, Grimson, and Wagner (1982) explored the use of the CES-D with adolescent populations and they determined that the CES-D had good internal reliability, internal consistency, and/or test-retest reliability. Therefore, they asserted that the CES-D scale appears to be appropriate for use with adolescents. However, these findings were limited to these studies.
The weak correlation is one logical theory as to why the BDI-Y demonstrated statistically significant differences between the groups and the CES-D did not demonstrate similar results. Another possibility is that a Type II error occurred for the CES-D because the power analysis suggested more participants were needed for the study. Meaning, the researcher failed to detect a difference when a difference truly existed. A combination of these two theories is logical because the trend analysis revealed significant outcomes for the CES-D progress monitoring data.

This implies that more research is needed on the BDI-Y and the CES-D and the extent to which they correlate. More research also is needed on the CES-D’s use with children and adolescents. Additionally, because the BDI-Y and CES-D have a weak correlation, they potentially measure different constructs, possibly for different populations, and a Type II error may have occurred on the CES-D pre-test/post-test data as suggested by the trend analysis.

**Research Question 2 Conclusions**

For the CES-D, BASC-2-PRS-W, and the BASC-2-TRS-W, the dependent scores collected from the participants in the experimental and treatment as usual group were not significantly changed when the covariates (i.e., gender and age, average grade, and number of discipline referrals in a school year) were controlled. For the BDI-Y, the number of discipline referrals made a statistically significant difference, but the difference was of little practical value as it explained a menial percentage of the variance. Thus, for the CES-D, BASC-2-PRS-W, and the BASC-2-TRS-W, the null hypothesis
was retained. For the BDI-Y, the null hypothesis was rejected. However, the finding was of little practical significance.

**Research Question 2 Implications**

The conclusions to research question 2 suggested that gender, age, and average grade did not significantly impact the dependent variables. However, discipline referrals in a school year on the BDI-Y had a statistically significant impact, but it was of little practical value. This implies that for the population explored in this study, these factors did not statistically and/or practically impact their progress in either the treatment as usual group or the experimental group. Certainly, it is possible that a Type II error may have occurred. Therefore, it is important to be conservative in generalizing the results. Additionally, because there is a possibility that a Type II error occurred, the covariates should be re-explored with a larger sample to enhance the generalization of these results. Other covariates, such as attendance to school and/or attendance to group, should be explored to see if they have a statistically significant impact on the dependent variables.

If these results are replicated, it would be a significant finding and a testament to the impact of an intervention for students at-risk for depression as these pre-existing factors would not impact the effectiveness of the intervention. What is unknown is the extent to which the intervention impacts these factors. For example, does the intervention impact a student’s grades post-intervention? Post-intervention data, such as this, is a critical future step in the literature as interventions, such as the CWD-A, have the potential to impact more than at-risk for depression symptoms.
Research Question 3 Conclusions

Participants included in a modified CWD-A intervention had differing scores on an ongoing time series measure (CES-D) when compared to the treatment as usual group. The treatment as usual group showed slight improvements mid-way through the intervention. However, the treatment as usual group’s pre-test/post-test scores were very similar. The experimental group showed steady improvement throughout the intervention and forecasted data points were much lower than the forecasted data points for the treatment as usual group. Therefore, the null hypothesis was rejected. Results of the trend analysis suggested that the experimental group demonstrated greater improvement as evidenced by a decline in the experimental groups’ self-reported depressive symptoms. Given the support in the literature for the curriculum delivered in the experimental group, this was not a surprise.

Research Question 3 Implications

The results and conclusion of research question 3 showed that the experimental group made statistically significant gains in comparison to the treatment as usual group. This implies that the experimental group curriculum was more effective than the treatment as usual group curriculum, as measured by the CES-D. Therefore, in a rural population of fifth, sixth, seventh, and eighth graders who are at-risk for depression and attend this Pennsylvania school district, the modified CWD-A curriculum should be selected. These conclusions and implications provide further evidence that a Type II error may have occurred for the CES-D measure in research question 1 because strong statistical significance was associated with the outcomes of this research question.
The interventions explored in this study lasted ten weeks. It is possible that the same results could be found in delivering the modified CWD-A curriculum over a shorter period of time (i.e., eight weeks). It is important that this be explored in a school-based population because if a shorter group were equally effective, students would loose less academic time and benefit equally from the at-risk for depression group.

**Research Implications**

As asserted in Chapter I, there is limited research that has explored school-based mental health systems as a preventative service delivery model and even less research has explored targeted and intensive level evidence-based interventions that are effective within the school environment. Further, the majority of children in need of school-based mental health services experience symptoms of depression, but few evidence-based interventions targeting these children have been empirically evaluated in school settings.

Studies have shown that the CWD-A is effective (Clarke, Rohde, Lewinsohn, Hops, & Seeley, 1999; Rohde, Lewinsohn, Clarke, Hops, & Seeley, 2005) and significant preventative effects have been found (Clarke et al., 2001). However, the literature has revealed two separate theories regarding the success of the CWD-A with an at-risk for depression group, and no study explored altering the CWD-A curriculum to adapt to the school environment. For example, although Clarke et al. (1995) found that depressive episodes were prevented in a high school sample of children at-risk for depression, another group of researchers also explored the effects of the CWD-A on a population of children with “low severity” depression (Rhode, Lewinsohn, & Seeley, 1994). Rhode et al. found no program effects for adolescents with a low severity of depression symptoms.
The present study aimed to begin filling this gap in the literature. The results of this study imply that the CWD-A is more effective, according to time series data, across a ten week intervention for fifth, sixth, seventh, and eighth graders in a rural Pennsylvania school district in comparison to a treatment as usual group. The results also suggest that further research is needed to make stronger conclusions regarding the pre-test and post-test results.

The present study provided many implications that addressed needs researchers have highlighted in the literature. For example, Herman et al. (2004) identified barriers school psychologists have faced in developing prevention of depression interventions. The present study accounted for cost effectiveness and socioeconomic aspects of depression were considered. Most importantly, this prevention study focused on a group-based delivery system rather than individual interventions. Farmer and Farmer (1999) also identified concerns in the literature. They asserted that few, if any, researchers approached the school as the target of the intervention versus using schools as a site for intervention (i.e., Clarke et al., 1995).

In the present study, incorporating the school was a part of the theory in developing the intervention rather than a convenient location. Further, according to Promising Practices Network (2008), no strong conclusions for the CWD-A could be drawn until further research was conducted utilizing an at-risk population. The present study provides additional research that will contribute to the Promising Practices Network conclusion. This conclusion is important, especially to practicing school psychologists, because it informs their choices regarding interventions. Finally, this
study was conducted by researchers unaffiliated with the development of the CWD-A intervention, a novel contribution to the literature.

On a more theoretical level, the findings of the time series data support the literature on Cognitive Behavioral Therapy (CBT). For example, CBT has been shown to be effective in reducing the symptoms of depression for children and adolescents (see Chapter I; Stark et al., 2005). More specifically, CBT has been shown to be superior to wait-list control studies, relaxation training, supportive therapy, systematic-behavioral family treatment, and traditional counseling (Stark et al.; Weersing & Brent, 2003). Additionally, CBT has been shown to be effective in non-clinical settings (Weersing & Brent). Further, David-Ferdon and Kaslow (2008) concluded that, for children experiencing symptoms of depression, CBT provided through group-based modalities was a well-established intervention. Therefore, the conclusions made from research question 3 provide further evidence for CBT.

Applied Research Implications

Applied research has a variety of limitations. For the present study, population size was a limitation. Reference to a Type II Error has been made periodically throughout this discussion because the power analysis suggested more participants were needed to conclude that the researcher did not fail to detect a difference when a difference truly existed. This has raised concerns with internal validity. Although this was a limitation to the study and one clear implication was to replicate the study with more participants, the present study was still valuable and its results should not be under-mined.
For example, although the present study had a limited population, it also significantly contributed to the literature by providing information to the research community about a school-based preventative group-based intervention for students in a rural setting who were at-risk for depression where otherwise no information existed. It also provided information to a rural school district in Pennsylvania regarding its school-based mental health initiatives and the effectiveness of the prevention efforts. Though this information can only be generalized back to the fifth, sixth, seventh, and eight graders at the Pennsylvania school district, it also has provided information to other rural school districts in Pennsylvania who are interested in beginning or expanding their school-based mental health services.

In an effort to enhance and expand school-based mental health initiatives, the field of school psychology has placed increasing emphasis on research-based interventions. While the field has developed significant research-based practices (i.e., modules within Cognitive Behavioral Therapy, such as relaxation techniques), comprehensive mental health intervention programs that are shown to be research-based are sparse. Without conducting studies, such as the present study, little information about implementing interventions in applied settings, such as schools, could be acquired. Furthermore, without conducting studies such as the present one, little information about rural schools could be acquired. This would significantly impact the research community’s ability to generalize results back to the population (external validity). Without such information, there would be a large gap in the literature and the literature would only include and could only be generalized to research settings or to large urban
schools where a larger sample size could be obtained. Studies, such as the present one, can be replicated several times to develop a database that has a sufficient number of participants. Consequently, all participants from multiple smaller studies can be included in an analysis to avoid committing a Type II Error.

**Power Analysis Implications**

The results of the power analysis indicated that it is possible that a Type II error occurred in the analysis of the present study. A Type II error may have occurred because the population size is lower than the ideal amount that was indicated by the power analysis. A Type II error, or a false negative, refers to a failure to reject the null hypothesis when the null hypothesis is false or the probability that a difference is not detected when a difference is actually present.

**Summary**

In summary, the conclusions for the research questions were, at first inspection, somewhat contradictory. However, with more detailed analysis, a simple correlation assisted in bringing clarification to the conundrum. For example, the outcomes of research question 1 and research question 3 opposed one another because the conclusion of research question 1 was that on the BDI-Y instrument, the treatment as usual group demonstrated greater improvement and the conclusion of research question 3 was that on the CES-D trend analysis data, the experimental group demonstrated greater improvement. However, a correlation showed that the BDI-Y and CES-D instrument had a weak correlation despite purporting to measure the same construct, symptoms
associated with depression. Furthermore, it was possible that a Type II error occurred because the sample was smaller than suggested by the power analysis for the CES-D instrument in research question 1, which would have further validated the findings in research question 3, the trend analysis. Aside from these findings, both the experimental group and the treatment as usual group and the experimental group made progress and the groups did not increase their symptoms associated with depression. Moreover, the findings for research question 3 demonstrate that over time, the students who participated in the modified CWD-A curriculum had stronger outcomes in comparison to the treatment as usual group. However, further research is needed to make stronger conclusions that continue to contribute to the literature.

Limitations

Following are limitations to the present study. The author will discuss limitations associated with dual roles, Type II error, method, instruments, and external validity. The school psychology intern was also the experimenter. It is important to note that this was a limitation of the study because the experimenter had knowledge of the hypotheses of the study. As indicated in Chapter V, it is possible that a Type II error occurred in the analysis of the present study. A Type II error may have occurred because the population size was lower than the ideal amount that indicated by the power analysis. A Type II error, or a false negative, refers to a failure to reject the null hypothesis when the null hypothesis is false or the probability that a difference is not detected when a difference is actually present.
The method in which students’ names was provided to the school psychologist and school psychology intern for the screening process was a limitation to the study. This method was a limitation because some students who may have been appropriate for the group could have been missed in the referral process. Rather, a school-wide screening should occur. Additionally, researchers used a semi-structured screening process. It would be beneficial to standardize the screening procedures. For example, Doll and Cummings (1998) stress the importance of screening the entire student population with a brief, efficient to code, highly accurate measure that can be repeatedly administered.

The school psychologist and school psychology intern modified the CWD-A curriculum. Though the approach was logical, it was not based on research as no research has examined which CWD-A modules are most effective. This is a limitation because it does not utilize the entire CWD-A curriculum, which impacts future researchers’ ability to replicate the study.

Few studies have explored the use of the CES-D with a child and adolescent population. For example, Roberts, Andrews, Lewinsohn, and Hops (1990) and Schoenback et al. (1982) found the CES-D had good internal consistency, internal reliability, and test-retest reliability and they asserted that the CES-D scale appears to be appropriate for use with adolescents in grades 6th through 12th grades. Although these studies that have support the use of the CES-D with a child and adolescent population, it may lack validity and reliability with a child and adolescent population and further research is needed on the use of this instrument with this population.
The experimental group received ten intervention sessions; whereas, the treatment as usual group received five intervention sessions. Therefore, the experimental group received a more intensive intervention, which may have contributed to the findings. This is a limitation as other studies similar to the current study have ensured the experimental and the control/treatment as usual groups have received the same amount of treatment (i.e., Lewinsohn et al., 1990).

Finally, this study utilized an adolescent and child population in a rural area. Therefore, the findings were limited to generalizing back to the rural population of fifth, sixth, seventh, and eighth graders that were included in the present study. This limitation addresses the issue of external validity, which has been a limitation in other similar studies (i.e., Clarke et al., 2003; Clark et al., 1995; Lewinsohn et al., 1990).

Future Research

This study has contributed to the literature on intervening with students at-risk for depression. However, future research is needed to continue to discover more about school-based interventions designed to prevent depression in students who are at-risk for depression. More specifically, research that focuses on the tertiary level of intervention for depression is needed in the literature.

It is suggested that this study be repeated using a larger sample in a rural setting. It is also suggested that this study be repeated using a larger sample in urban and suburban settings. Development of screening and progress monitoring instruments for children and adolescents at-risk for depression should continue to be explored in the literature. Additional research is needed on the reliability and validity of the CES-D with
a child and adolescent population. Further exploration into the BDI-Y and the CES-D and the extent to which they correlate is needed in the literature as they purport to measure the same construct, symptoms of depression. One way to expand this literature is to explore the use of the CES-D with a child and adolescent population.

Only specific subscales on the BASC-2 and the BYI-II were used for data analysis. Further research on the impact these interventions had on other subscales is needed. For example, it would contribute to the literature to explore the impact of these interventions on the BASC-2 “anxiety scale and/or the BYI-II “anxiety” scale. Likewise, it would contribute to the literature to explore the BASC-2 “internalizing” score and the total BYI-II score to see if the interventions significantly impacted the scores.

This study explored manualized interventions for depression. It would contribute to the literature to analyze which modules within the manualized intervention made a more significant impact in decreasing symptoms of depression. Identifying these modules may contribute to a more effective curriculum.
APPENDIX A

Rural Pennsylvania School District

Screening Permission Form
Dear Mr. and Mrs. X,

At Rural Pennsylvania School District, we are extending our wellness curriculum to include group-based activities that will focus on skills such as coping with stress and depression, anger management, and problem solving as a part of our school-based mental health initiatives. Teachers and administrators have made nominations and recommendations for students that may benefit from being included in these wellness groups.

Your son/daughter, X, was recommended to be considered for one of the wellness groups. However, to determine if X is a likely candidate for the wellness group, the school psychologist and school psychology intern would like to talk with John and have him complete two rating scales. Please see the “Wellness Group Screening Permission Form” below.

If you agree to allow this team to talk with X and have him/her complete two rating scales, you will be contacted regarding the results of the screening. If it is determined by this team that X is a good fit for a wellness group, you will be asked to complete an additional permission form regarding his/her inclusion in a specific wellness group.

If you have any questions, please do not hesitate to call me at the phone number or e-mail provided below.

Sincerely,

Middle School Administrator

Middle School Administrator’s Contact Information
Rural Pennsylvania School District
Wellness Group Screening Permission Form

Please check one of the following:

_____ Yes, I give permission for the school psychologist and the school psychologist intern to talk with my son/daughter and have him/her complete two rating scales about him/herself.

_____ No, I do not give permission for the school psychologist and the school psychologist intern to talk with my son/daughter and have him/her complete two rating scales about him/herself.

Please return this form to:

Middle School Administrator
Middle School Administrator’s Contact Information
APPENDIX B

Rural Pennsylvania School District School-Based Mental Health Services Consent Form
This form provides general information about school-based mental health services including mental health screenings, individual and group counseling, as well as behavioral consultations. The services provided at school are to address concerns that are affecting a student’s educational progress. Other issues related to family or outside situations may not be appropriate to address in a school setting. In such cases, the school will offer parents/guardians a list of local mental health providers to contact at their discretion. Your child is being referred for the following services (as indicated by the checked boxes):

**Screening/Evaluation Services**

☐ **Mental Health Screening.** Before a student can be involved in any of the school-based mental health services, a screening must be conducted to determine if the student is in need of school-based services, and if so, if his or her needs are consistent with the services offered. The screening process uses a number of assessment tools, and a specific screening may include classroom observations, behavior rating scales (completed by caregivers and teachers), self-report rating scales, parent and teacher interviews, an interview the student, as well as a review of records. This screening is to offer information about the student’s need for mental health interventions at school, and alone it is not sufficient to identify a specific diagnosis or educational classification. This screening is necessary before a student is recommended for group counseling or individual counseling interventions. Results of the screening will be discussed with parents/guardians through telephone contact or a direct meeting.

☐ **Functional Behavior Assessment (FBA).** FBAs are a method of gathering information on a student in order to develop a specific behavioral intervention plan to address concerns within the school. An FBA consists of various components and may include classroom observations, behavior rating scales (completed by caregivers and teachers), self-report rating scales, parent and teacher interviews, an interview with the student, as well as a review of records. The information from the FBA will be used to develop a Positive Behavior Intervention Plan (PBIP). Results of the FBA will be discussed with parents/guardians, and all written reports or intervention plans will be provided.
Intervention Services

- **Individual Therapy Services.** Individual counseling services are provided on a short-term basis (10 to 20 sessions to students in order to provide additional support or to address a specific need that is impacting a student’s educational progress. These sessions occur during the school day and last from 20 to 50 minutes per session, depending on the student and areas of need. Generally, individual counseling sessions are held with the child or adolescent, though at times, parents or other family members may be invited to have a joint session. In order to maintain a working, therapeutic relationship with the student, the sessions are confidential and details of individual sessions are not ordinarily shared with the parents or legal guardians or school staff (see Limits of Confidentiality below). However, the school-based service provider (e.g., school psychologist, guidance counselor, etc.) will provide information regarding intervention goals and progress to the parents and school-based team. School-based therapy services are not appropriate for all students, and issues not related to the student’s education will be discussed with parents/guardians and appropriate outside referral information will be provided.

- **Group Therapy Services.** Group counseling services are offered to address different areas of difficulty and they are used to teach student’s coping skills to help increase their academic and social and emotional health. Group services are provided on a structured schedule and a short-term basis (e.g., 8 to 10 sessions). These sessions occur during the school day and last approximately 50 minutes per session. Groups are developed around specific topic areas and may include managing anger, reducing stress, enhancing problem solving, and improving mood and positive thinking. Generally, group counseling sessions include 4 to 8 students. In order to maintain a working, therapeutic relationship with the students, the sessions are confidential and details of group sessions are not ordinarily shared with the parents or legal guardians or school staff (see Limits of Confidentiality below). However, the school-based service provider (e.g., school psychologist, guidance counselor, etc.) will provide information regarding intervention goals and progress to the parents and school-based team.

- **Behavioral Consultation Services.** These sessions consist of a meeting with the parents/guardians and/or teacher in order to develop specific intervention plans or to provide education regarding behavior modification and behavior management strategies. These sessions may be informal, without direct interaction with the student, or formal, in which FBA information is collected and a PBIP is developed and progress is monitored.
Confidentiality

Information obtained in from any of the school-based mental health services is held in strict confidence. This information is not released to others without consent of the parents/legal guardians and/or student (if over 14 years of age). Because the services are being offered and paid for by the student’s school district, certain information will be provided to the school-based team including: (a) dates of appointments, (b) attendance of appointments, (c) intervention goals, and (d) intervention progress. In addition, the service provider will release information regarding the sessions if any of the following exist: (a) if the student threatens bodily harm to him or herself or another person, (b) if he or she reports firsthand incidents of child abuse, (c) if the student reports involvement in criminal activity, or (d) if a court of law issues a legitimate subpoena or court order. No other information will be released without the approval of the student’s parents/legal guardians and student (if over 14 years of age). It should be noted that given that these services are offered during the school day, students participating will be called to the office for their appointment.

Because of confidentiality, detailed session data (e.g., individual session notes, student comments, etc.) will not be part of the student’s educational record. Instead, the service provider maintain session notes to help identify progress and needs that are kept in the Psychological Services Office, and a brief progress summary will be provided to the parents at the end of the intervention, or more frequently when needed. In addition, in order to monitor the effectiveness of the school-based mental health services offered in South Middleton School District, a confidential database monitors progress and effectiveness of specific services and programs. When reporting the effectiveness of the services or programs or if the results are used for training or publishing purposes, no names or other identifying information will be used, and all students’ names and personal data remain confidential.

Course of Intervention

Appointments will be scheduled at times during the school day. Goals will be set for intervention and progress monitoring will occur. The number of intervention sessions will depend on student progress or lack thereof. However, school-based mental health services follow a model of brief therapy/intervention and address situations specific to a student’s educational program or progress. In a brief model of therapy, the number of sessions range from 1 to 20 sessions, but often does not exceed 10 sessions. Intervention termination issues will be addressed throughout the sessions.

Consent

The signature of the parent or legal guardian agrees he or she has been informed in
simple, nontechnical terms about the policies and procedures of school-based mental health services in South Middleton School District. Furthermore, it grants the school-based service provider permission to work with your child for the services checked below. Your signature affirms voluntary consent to the services being pursued. This consent will be active until the specific services have been discontinued or according to the information below.

**In cases of joint legal custody (with appropriate documentation provided to the school), both parents are required to sign consent.** By signing below, I/We understand that the services being conducted are **not** for custody purposes or disputes. Therefore, I knowingly and freely waive my right to request the release of information to my attorney or any other Officer of the Court for custody purposes.

I/We further agree that this agreement become part of the record, and is accessible to the parents/guardians and the school district, but to no other parties without the parents’ or legal guardians’ written consent. If you have any questions regarding the above, or about any other aspect of the recommendations or service, please feel free to ask at any time.
You may contact Dr. Ray W. Christner (District Psychologist) at 717-258-6484 ext. 2003 or rwc@smsd.us.

I have read, understand, and agree with the information presented above.

_________________________________  __________
Parent/Guardian     Date

_________________________________  __________
Student (if over 14 years of age)     Date

_________________________________  __________
Service Provider     Date
APPENDIX C

Group Screening Procedures
1. Explain referral to wellness group and build rapport. (i.e., We are going to be running some groups on wellness this year and some teachers and administrators thought that you may benefit from one of the groups. For example, some of the groups will focus on stress management and problem solving skills).

2. Administer Beck and CES-D (scan for responses to “caution/red flag” items).

3. Ask screening questions.
   a. How are things going in school (probe for positive and negative aspects of school)?

   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________

   b. How do you feel when you’re at school (prompt if needed – i.e. sad, anxious, nervous, angry, etc.)?

   _______________________________________________________________
   _______________________________________________________________

   i. Why?

   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________

   c. How are things going at home (probe for positive and negative aspects of home)?

   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________

   d. How do you feel when you’re at home (prompt if needed – i.e. sad, anxious, nervous, angry, etc.)?

   _______________________________________________________________
   _______________________________________________________________

   i. Why?

   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________

   e. What do you do when you feel sad/anxious/nervous/angry/etc.?
f. Is there anyone you turn to for support when you feel sad/anxious/nervous/angry/etc.?


g. What are your thoughts about being in a group that focuses on wellness?


h. What questions do you have?


4. Explain process from here (i.e. If team determines you may benefit from one of our groups, we will contact your family. If your family agrees to allow you to participate, then you will be included in the group).
APPENDIX D

Rural Pennsylvania School District Crisis Procedures
1. If a person is in immediate danger (i.e., threatened suicide):
   
   a. Notify building administrator and/or nurse
   
   b. Notify psychologist or counselor
   
   c. Building administrator should assign someone to call 911, if appropriate.
   
   d. Talk calmly with the person until appropriate personnel arrive
      
      i. Be positive
      
      ii. Engage the person in conversation
      
      iii. DO NOT become confrontations
      
      iv. DO NOT make fast movements toward the individual
      
      v. When trained personnel arrive, defer to their judgment on the
         course of action to be taken
      
      vi. Notify district administration of the situation

2. If a person is not in immediate danger, but has expressed the thought of suicide:
   
   a. Contact administrators/counselors and have them escort the person to the
      office for appropriate intervention
   
   b. Refer to “START/SAP Team” (a team that refers students for intensive
      intervention services)
   
   c. Provide Teen Line (Hotline): 717-763-2345
APPENDIX E

Letter from a Rural Pennsylvania School District
January 27, 2009

Lyle Barton, Ed.D.
Institutional Review Board EFSS Reviewer
Kent State University
Educational Foundations and Special Services
405 White Hall
Kent, Ohio 44242

Dear Dr. Barton:

I am writing in regards to Courtney L. McLaughlin’s research study that you are reviewing as a part of Kent State University’s Institutional Review Board (IRB). For research purposes, Courtney has expressed interest in using South Middleton School District’s School Based Mental Health Database for the 2008 to 2009 At-Risk for Depression Middle School Group that we as a district have created and maintained. Provided her study is approved by the IRB, we will release to her a blind copy of the database that contains no student identification information so that subjects cannot be identified, directly or through identifiers linked to the subjects. As a district, we are aware and in support of her use of this database.

Please feel free to contact me should you have any questions or concerns.

Sincerely,

Patricia B. Sanker, Ed.D.
Superintendent
REFERENCES
REFERENCES


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