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THE EFFECTS OF A SCHOOL-BASED COGNITIVE-BEHAVIORAL
INTERVENTION PROGRAM ON THE DEPRESSION SCORES OF
SIXTH GRADE STUDENTS: A COMPARISON OUTCOME STUDY

by

Lois Ilene Bursuk

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY
In the Graduate College
THE UNIVERSITY OF ARIZONA

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ABSTRACT

The effects of a school-based cognitive-behavioral intervention approach on the depression scores of sixth grade students were examined in the study. Two hundred and one sixth grade students served as participants in one of four experimental groups: treatment group, attention-placebo group, delayed treatment group, and no treatment control group. All groups, except the control group, participated in the school-based program called "learned optimism." The learned optimism program is an eight-week curriculum-based program designed to assist adolescents in developing a more optimistic self-explanatory style that contributes to resiliency and positive mental health. All participants completed the Children's Depression Inventory (CDI) on three occasions: before the learned optimism program began (pretest), immediately after the first eight-week program was terminated (posttest 1) and eight weeks later, after the second eight-week program was terminated (posttest 2/follow-up). The results were unexpected. They showed only a significant difference on CDI total scores between the treatment group and delayed treatment group immediately following both groups' participation in the learned optimism program. No significant differences on CDI total scores were found at any other time between or within any of the four groups. Some significant differences were found on CDI subscales between the treatment and delayed treatment groups, but not in the expected direction. Results from an informal questionnaire completed by participants showed that most liked the learned optimism

program and it made them feel happier. Plausible explanations for the findings were discussed along with limitations of the study and recommendations for future research in this area.

CHAPTER 1

INTRODUCTION

The presence of depression in children and adolescents has been discussed in the research literature for many years (Clarizio, 1989). The positions taken in the literature have varied from questioning whether depression really exists in children to discussions of the defining characteristics of childhood depression and their similarities and differences to their adult counterpart (Cantwell & Carlson, 1983; Carlson & Garber, 1986; Kazdin, 1990; Kovacs & Beck, 1977). It was not until 1952, when the journal The Nervous Child devoted a special issue to manic-depressive illness that depression among preadolescents attracted much professional attention (Clarizio, 1989). By the end of the 1960s, studies were documenting the presence of marked levels of "depressive symptoms" in clinically referred young people (Angold, 1988). These observations led to the suggestion that if children had symptoms that resembled those of adult depressive patients, it was reasonable to diagnose them as being depressed (Cytryn & McKnew, 1972; Frommer, 1968; Pozanski & Zrull, 1970). It was not, however, until 1980 that depression was recognized as a clinical disorder among children by the American Psychiatric Association (Stark, 1990).

Although there is still some controversy over how depression is manifested in children, there is an emerging consensus that the essential features of childhood and

adolescent depression are similar to those of adult depression with some additional developmental features (Cantwell & Carlson, 1983; Kovacs & Beck, 1977). For example, a depressive disorder in a child should not be presumed to be a transient developmental phenomenon but, rather, a bona fide affective disorder that warrants clinical intervention (Kovacs, 1985a). The depressive episodes of most children may eventually subside; however, they tend to be of longer duration than previously thought, and they tend to recur (Kovacs, Feinberg, Crouse-Novak, Paulauskas, & Finkelstein, 1984). Furthermore, childhood depression appears to lead to a serious disruption in the "normal" development of children (Puig-Antich, Lukens, Davies, Goetz, Brennan-Quattrock, & Todak, 1985) and may also result in life-threatening, self-destructive behaviors (Carlson, 1983). For example, it has been reported by Kovacs (1989) that about two-thirds of juveniles with a history of depression will probably develop a new episode of depression while they are still in their teens, and about 20% of a given sample may develop bipolar disorder before they reach adulthood. In addition, these juveniles are also likely to develop other psychiatric conditions as complications of the depression.

Incidence and Prevalence of Childhood Depression

According to Stark (1990), the lack of recognition of depression in children in the past has resulted in the prevalence of this disorder being underestimated for years. In addition, Stark maintained that because the symptoms of depression are largely internalized, the disorder often goes unnoticed by parents and school staff, and is therefore underdiagnosed.

In samples of the general population, the prevalence of depression among school-aged children has ranged from 1.9% (Kashani & Simonds, 1979) to 13.9% (Pfeffer, Zuckerman, Plutchik, & Mizruchi, 1984). Stark (1990) reported that when using a multiple-gate assessment procedure in his research in schools, he found a prevalence rate for major depression of 1%. Kashani et al. (1983) reported prevalence rates ranging from 2.5% to 4.4%, whereas Pfeffer et al. reported a rate of 13.9%. When lifetime rates were computed, Kashani et al. reported rates of 2.9% to 4.4% for major depression and 12.2% for dysthymic disorder (a milder and somewhat less impairing but chronic form of depression). Stark found over a three-year period that about 1% of the general school population reported symptoms associated with dysthymic disorder. When children were considered for dysthymia, major depression, and depressive disorder not otherwise specified, Stark found a prevalence rate of 4%.

Lefkowitz and Tesiny (1985) found that 5.2% of their sample exhibited severe levels of depressive symptomatology. In their study they did not interview their subjects, and instead used a paper-and-pencil measure (the Peer Nomination Inventory of Depression). Cut-off scores that indicated severe levels of depressive symptomatology enabled them to identify depressed children.

With regard to prevalence of depression in special populations, Weinberg, Rutman, Sullivan, Penich, & Dietz (1973) interviewed children who were referred to an educational diagnostic clinic and their parents. Results indicated that 49% of the children were depressed at the time of the interview, and another 10% had been

depressed in the past. Lobovits and Handel (1985) acquired self-reported information from children who were referred to a psychiatric clinic for behavioral and academic problems. They found that 34% of the children were depressed. When information was obtained via the children's mothers, 22% of the children were reported to be depressed. Kashani, Burk, and Reid (1985) studied children of depressed parents and reported that 13% of the children of unipolar depressed parents and 22% of the children of bipolar depressed parents were depressed according to self-reported information. After reviewing existing literature, Stark (1990) reported that "depressed children comprise a relatively large proportion of the children referred to psychiatric clinics" (p. 47).

Prevalence data regarding depressive symptomatology in children vary widely across research studies for a number of reasons. Stark (1990) cited the following factors as contributors to the lack of consensus among studies: (1) differences among specific populations being studied (e.g., children in the general population versus at-risk children such as the offspring of depressed parents; children with serious, life-threatening diseases; and children involved in psychiatric treatment); (2) different diagnostic criteria (e.g., DSM-III, DSM-III-R, or the researcher's own criteria) utilized across research studies; (3) different methodology used to identify depressed children (e.g., self-reported measures, interview data, case notes, etc.); (4) number of informants used to identify depressed children (e.g., child only; child and parent; peers; or multiple sources such as child, parent, school staff, and hospital); (5) differing ages of children included in the study; (6) some researchers reporting the

current rate of depression and some reporting the lifetime rate (i.e., the number of children who were depressed at the time of the study versus the number of children who were depressed at any previous time including children who were depressed at the time of the study); and (7) some studies have only reported the prevalence of major depression, whereas others included other depression-related disorders.

Age and Gender

Research has demonstrated that among adults, females are twice as likely as males to have depressive disorders (Nolen-Hoeksema, 1987; Weissman & Klerman, 1977). Among prepubescent children, however, the prevalence of depressive disorders has been reported to be slightly higher for males than for females (Eme, 1979). This trend reverses some time in mid-to-late adolescence, at approximately age 14 (Kashani et al., 1987; Nolen-Hoeksema, 1990). For example, the results of the first two years of a four-year longitudinal study of third graders by Nolen-Hoeksema, Girgus, and Seligman (1991) indicated that more depressive symptoms were consistently reported by boys on self-report instruments. Further analysis of the gender differences on scores in each of five types of depressive symptoms revealed that boys and girls were equally likely to report sad mood, self-derogation, and physiological complaints, but boys were more likely than girls to report behavior-disturbance symptoms and anhedonia (loss of interest in usual activities). It appeared that controlling their own conduct and enjoying relationships with other children were more often perceived as problematic for boys than for girls. Kandel and Davies (1986) reported that in a sample of 15 and 16 year old boys and girls,

23% of the girls, compared to 10% of the boys, reported levels of depression in the moderate to severe range on a depression questionnaire.

Anderson, Williams, McGee, and Silva (1987), studying a group of 11 year-old children, found a significantly higher number of boys versus girls to be depressed. The children had been assessed using an interview method. Finch, Saylor, and Edwards (1985) used a self-report instrument with males and females between 7 and 16 years of age and found that the boys were significantly more depressed than the girls.

Other studies have reported results contrary to the above findings. For example, Reynolds, Anderson, and Bartell (1985) found girls to be significantly more depressed than boys when comparing the depression scores of children in grades three through six. The girls scored higher on a self-report scale and on a self-esteem inventory. Jacobsen, Lahey, and Strauss (1983) reported that girls in second through seventh grades were significantly more depressed than boys when comparing scores on a peer nomination inventory.

With regard to age differences, it appears that the prevalence of depression increases with age (Kazdin, 1990). In a study by Rutter, Tizard, and Whitmore (1970), 13% of 10 and 11 year old children from the general population showed depression. When the same children were reassessed at age 14-15 years, over 40% reported symptoms of depression. Helsel and Matson (1984) found that in a group of children and adolescents between 4 and 18, age was significantly related to higher depression scores on two factors related to depression: affective behavior and

image/ideation. Subjects between 11 and 18 scored significantly higher than children under 11 years of age.

As with prevalence studies in general, research on the prevalence of depression by age and gender has yielded inconsistent findings. Because of differences in assessment instruments, diagnostic criteria, and composition of samples across studies (Kazdin, 1990), prevalence data related to the age of onset of depression and gender differences remains unclear.

Suicidal Behavior and Depression in Children and Adolescents

Suicide among youth is a problem that has been steadily growing and shows no signs of decreasing. It has been estimated that for every high school of 2,000 or more students in the United States, there is at least one successful suicide and 30 to 50 attempts each year (Arizona Department of Education, 1992). Among the various clinical mental disorders, depression is found to be the most frequently diagnosed disorder in youth suicide attempters (Carlson & Cantwell, 1982). In a study conducted by Carlson and Cantwell (1982) that involved psychiatrically referred children and adolescents, 63% of the subjects with high scores on a depression rating scale were suicidal versus 34% who were suicidal but not depressed. However, when a disparity existed between suicidal ideation and the depression rating scale score, other affective disorders were diagnosed.

Completed suicides are rare in children under age 13 (Shaffer, 1974); however, the frequency of suicide attempts increases with chronological age, with a

rapid rise at 13 to 14 years of age (Mattson, Sesse, & Hawkins, 1969). Carlson and Cantwell (1982) examined the absence of suicidal ideation and the presence of severe suicidal ideation and found that the variance between younger children and adolescents was only slightly statistically significant. Yet their findings suggested that suicide attempts were clearly a more frequent problem for adolescents.

A study by Kazdin, French, Unis, Esveldt-Dawson, and Sherick (1983) maintained that the correlation between suicidal intent and depression is accounted for by their common association with hopelessness. In fact, the relationship between suicidal intent and depression was not significant when hopelessness was controlled statistically. In their study of psychiatric inpatient children ranging in age from 8 to 13 years, they demonstrated that depressed children are capable of holding negative expectations toward the future. By assessing the level of hopelessness in children, subsequent suicidal behavior may be predicted. In this study, degree of hopelessness did not vary as a function of age. An additional interesting finding was that those children who attempted suicide were not significantly different in their level of hopelessness from those who threatened or repeatedly thought about suicide. Kazdin and colleagues concluded that although other variables may determine whether an actual suicide attempt is made, hopelessness may still be clinically useful as one risk factor for suicidal intent.

School-Based Interventions for Childhood Depression

A review of the existing research on school-based intervention for childhood depression reveals a dearth of studies. To date, only five treatment outcome studies

involving school-based interventions for depressed children and adolescents have been published (Butler, Mieztis, Friedman, & Cole, 1980; Gillham, Reivich, Jaycox, & Seligman, 1995; Kahn, Kehle, Jenson, & Clark, 1990; Reynolds & Coats, 1986; Stark, Reynolds, & Kaslow, 1987). These studies employed cognitive-behavioral methods of intervention and demonstrated significant reduction of depressive symptoms.

Although reasons for the scarcity of research on school-based interventions are unclear, Stark (1990) proposed that it may have resulted from the fact that the very existence of childhood depression has only been fully acknowledged recently. In addition, psychometrically sound assessment instruments for childhood depression were not available until the mid-1980s (Reynolds, 1984).

Because the debilitating effects of depressive symptoms are pervasive, it is logical that depression will negatively impact a child's functioning in the school environment. Childhood depression is prevalent in school populations (Stark, 1990); therefore, school-based interventions appear to be an ideal approach for treating many depressed youth. Based on the review of existing literature, it is apparent that school-based intervention for depressed children is an area that lacks outcome data. Clearly, a need exists for the development and empirical evaluation of treatment programs for depressed youth in the schools.

Purpose of the Present Study

The purpose of this study is to determine whether depressive symptoms in adolescents decrease significantly as a result of participation in a school-based

cognitive - behavioral intervention approach called "learned optimism." This program is derived from Seligman's (1990) reformulated learned helplessness theory (Abramson, Seligman, & Teasdale, 1978) which postulated that depressed children and adults hold a pessimistic explanatory style that is a contributing causative factor for depressive symptoms.

In this study, the learned optimism program is an eight-week, curriculum-based program designed to assist adolescents in developing a more optimistic self-explanatory style that contributes to resiliency and positive mental health. The program combines in-session instruction with weekly homework assignments that target how individuals think, feel, and react when faced with problems. Although the reformulated learned helplessness theory has been supported by some previous research (see Nolen-Hoeksema, Girgus, & Seligman, 1992), it has not been extensively studied in school settings. Based on the paucity of literature in this area of study, the following hypotheses will be examined.

Hypothesis 1. There will be no significant differences ($p > .05$) in depressive symptoms, as reported on the Children's Depression Inventory, among the learned optimism treatment group, attention-placebo group, delayed treatment group, and no treatment control group at Posttest 1 (following the first learned optimism treatment program).

Hypothesis 2. There will be no significant differences ($p > .05$) in depressive symptoms, as reported on the Children's Depression Inventory, between Pretest and Posttest 1 scores within any of the four groups.

Hypothesis 3. There will be no significant differences ($p > .05$) in depressive symptoms, as reported on the Children's Depression Inventory, among the learned optimism treatment group at Posttest 1, the attention-placebo group and delayed treatment group at Posttest 2, and the no treatment control group at Posttest 1.

Hypothesis 4. There will be no significant differences ($p > .05$) in the number of depressive symptoms, as reported on the Children's Depression Inventory, between Posttest 1 and Posttest 2 within the attention-placebo group and delayed treatment group.

Hypothesis 5. At an eight-week follow-up, there will be no significant differences ($p > .05$) in depressive symptoms, as reported on the Children's Depression Inventory, between the learned optimism treatment group and no treatment control group.

Hypothesis 6. There will be no significant differences ($p > .05$) in depressive symptoms, as reported on the Children's Depression Inventory, between Pretest, Posttest 1, and an eight-week follow-up in the treatment group and in the no treatment control group.

CHAPTER 2

REVIEW OF RELATED RESEARCH

This section includes a review of the literature on childhood depression with regard to definitional issues of the term depression, classification and diagnostic issues, and developmental considerations. A review of assessment methods utilized for childhood depression is included, as well as a review of the etiological theories of depression. Lastly, various treatment approaches are reviewed with an emphasis on those approaches applied in school settings.

Definitional Issues

A difficulty that arises when discussing the construct of depression involves the various ways in which the term is defined. Depression has been discussed at the level of a symptom, a syndrome, and a nosologic disorder (Cantwell & Baker, 1991; Kendall, Cantwell, & Kazdin, 1989). When the term depression is used as an individual symptom, it can refer to a sad mood, unhappiness, feeling miserable, feeling blue, and so forth. This usage denotes only one aspect of a depressive syndrome or a depressive disorder, that is, the dysphoric mood. Symptoms such as poor appetite and weight loss, insomnia, loss of energy, psychomotor retardation or agitation, and suicidal ideation are also often referred to as depressive symptoms. In some cases, these symptoms may be transient or result from specific negative

environmental events, and in other cases, they may be part of a psychiatric diagnosis.

When the term depression is used to describe a depressive syndrome, it is implied that more than one depressive symptom is present. The term syndrome is generally used to refer to a set of symptoms that regularly co-occur and are not associated by chance (Cantwell & Baker, 1991; Kendall et al., 1989). The depressive syndrome has generally been recognized as consisting of the eight symptom clusters: (1) dysphoric mood; (2) changes in appetite and weight; (3) changes in sleep pattern; (4) psychomotor agitation or retardation; (5) loss of interest in usual activities and loss of pleasure that is usually obtained from engaging in usual activities; (6) feelings of self-reproach or guilt; (7) a diminished ability to concentrate or think or slowed-down thinking; and (8) morbid thoughts of death, thoughts of suicide, or suicidal behavior (Kendall et al., 1989).

When the term depression is used to refer to a depressive disorder, more is implied than a depressive symptom or syndrome. When the term is used to describe a depressive disorder, it generally means that the depressive syndrome present has a certain minimum duration with some degree of functional impairment in important life areas, such as school, work, and/or interpersonal relationships. There is the implication that the disorder has not only a characteristic set of symptoms but also a characteristic outcome without treatment, a characteristic response to certain types of treatment, and characteristic correlates of a biological and environmental nature (Kendall et al., 1989).

Classification and Diagnostic Issues

Because adult diagnostic criteria for psychiatric disorders are relied upon for diagnosing depressive disorders in children and adolescents, an understanding of childhood and adolescent depressive disorders begins with an understanding of adult depressive disorders (Cantwell & Baker, 1991). Historically, the first significant attempt to specify the essential features of adult depressive disorders resulted in the "Feighner criteria" (Feighner et al., 1972), which required four major conditions to be present to diagnose depression: (1) dysphoric mood; (2) five of the following symptoms, poor appetite, weight loss, sleep difficulty, loss of energy, psychomotor agitation or retardation, loss of interest in usual activities (anhedonia), feelings of guilt or self-reproach, a diminished ability to think or concentrate, and recurrent thoughts of death or suicide; (3) duration of at least one month without preexisting medical or psychiatric antecedents; and (4) absence of massive or peculiar alteration of perception and thinking. The Feighner criteria were later modified in the Research Diagnostic Criteria (RDC) (Spitzer, Endicott, & Robins, 1978). The RDC criteria for the diagnosis of a major depressive disorder differed from the Feighner criteria in several ways. The RDC allowed the symptom of anhedonia to replace dysphoric mood, the duration of symptomatology was reduced to one week, and the RDC required the degree of functional impairment to be to the extent that the patient sought help.

The next significant attempt to define the clinical features of depressive disorder was that of the Diagnostic and Statistical Manual of Mental Disorders.

Third Edition (DSM-III) (American Psychiatric Association [APA], 1980), which was revised and published as the DSM-III-R in 1987 (APA, 1987) and again revised as the DSM-IV in 1994 (APA, 1994). In the DSM-IV, the major class of affective disorders is named "mood disorders." For a diagnosis of Major Depressive Episode, which applies to adults, adolescents, and children, the following criteria must be met: Five (or more) of the following symptoms have been present during the same two week period and represent a change from previous functioning. At least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

1. Depressed mood most of the day, nearly every day. 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.

3. Significant weight loss when not dieting or weight gain, or decrease or increase in appetite nearly every day. In children, consider failure to make expected weight gains.

4. Insomnia or hypersomnia nearly every day.

5. Psychomotor agitation or retardation nearly every day.

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.

9. Recurrent thoughts of death, or recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide (DSM-IV) (APA, 1994, p. 327).

These symptoms must cause clinically significant distress or impairment in important areas of functioning; cannot be due to the physiological effects of a substance or a medical condition or the loss of a loved one; and cannot coexist with delusions or hallucinations (DSM-IV) (APA, 1994).

A diagnosis of dysthymia can be made in adults when at least two of the above-mentioned criteria and depressed mood are present for a minimum of two years. Dysthymia is a milder and somewhat less impairing but chronic form of depression. While an episode of major depression typically lasts up to seven to nine months on the average, an episode of dysthymia may last at least three years (Kovacs, 1989). Dysthymia is also diagnosable in children and adolescents (Kovacs, 1989). For a diagnosis of dysthymia in children and adolescents, only one year of depressed mood is required in addition to the presence of two criteria (DSM-IV) (APA, 1994).

The validity of the DSM-III criteria for a diagnosis of depression in children and adolescents was first suggested by Cytryn, McKnew, and Bunney (1980), who noted that the characteristics defining depressive disorders within the DSM-III system closely resembled those characteristics most clinicians associated with childhood depression. The DSM-IV attempted to provide for some differences in symptomatology specific to children and adolescents. For example, it specified that

in children and adolescents, irritable mood may be substituted for depressed mood and that weight change criteria must involve a failure to make developmentally expected weight gains. In addition, it stated that certain symptoms such as somatic complaints, irritability, and social withdrawal are common in children, whereas psychomotor retardation, hypersomnia, and delusions are less common in prepuberty than in adolescence and adulthood. Nonetheless, in the DSM-IV, there were implicit and explicit assumptions that when depression occurs in a child or adolescent, the core symptoms are the same as those for adults. Kovacs (1989) suggested that although the DSM system has been criticized as insensitive to developmental issues, such criticisms are not entirely correct because the symptom criteria for affective disorders and their associated features do include some age-related accommodations.

Contrary to the Cytryn et al. (1980) findings, Werry, Methven, Fitzpatrick, and Dixon (1983) maintained that the DSM system was not reliable for diagnosing all childhood disorders. In fact, they recommended that further research be conducted to design better diagnostic data-gathering techniques for childhood disorders. Clarizio (1984) reported that overall agreement among clinicians' diagnoses of children's and adolescents' disorders was limited ($\kappa = .52$) when using the DSM-III criteria. In addition, Clarizio reported that items on a behavior rating scale used for characterizing childhood depression had minimal overlap with the DSM-III criteria for diagnosing depression. For example, of the 13 items appearing on the "depressed" factor on the rating scale, only two show substantial overlap with the DSM-III. Regardless of the shortcomings of available diagnostic

criteria, Kovacs (1989) contended that studies of outpatient and inpatient samples do converge in their findings that depressive disorders in the preadult years can be reliably identified.

Attempts have been made to develop sets of criteria specifically for the diagnosis of children (Cantwell, 1983). For example, Weinberg et al. (1973) developed a set of criteria for the diagnosis of depression in children modeled after the Feighner et al. (1972) criteria for adults. However, when Carlson and Cantwell (1982) compared the Weinberg and the DSM-III criteria, they found that many more children would be diagnosed as depressed based on the Weinberg criteria than on the DSM-III criteria. Although almost all children who met the DSM-III criteria also met the Weinberg criteria, the reverse was not true.

Despite the utility of the DSM-III and DSM-IV systems for clinical populations, some researchers (e.g., Clarizio, 1984) have indicated that they are of limited value to those working with children and adolescents in the public schools because psychiatrically derived classification systems are not educationally oriented, and school districts are mandated to use classification systems based upon federal and state guidelines. For example, The Individuals with Disabilities Education Act (IDEA) (Public Law 94-142 amended as 101-476), as outlined by Reynolds, Gutkin, Elliot, and Witt (1984), states, the following:

"Seriously emotionally disturbed" is defined as follows:

- (i) The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a

marked degree, which adversely affects educational performance:

- a. An inability to learn which 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:
or
 - e. A tendency to develop physical symptoms or fears associated with personal or school problems.
- (ii) The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed. (p. 428)

The fourth characteristic (d), "a general, pervasive mood of unhappiness or depression" (Reynolds et al., 1984, p. 428) is pertinent to identifying and providing services to children in the public schools who exhibit depressive symptoms. However, federal guidelines do not operationally define this characteristic, nor are there guidelines provided for interpreting "over a long period of time," "to a marked degree," or "adversely affecting educational performance" (p. 428). In addition,

regardless of the federal definition, there is currently a lack of consensus among states regarding the identification of emotionally disturbed school-aged children. According to Clarizio (1984), each state may have its own definition, provided it is at least as protective of the educational rights of handicapped children as specified under the federal legislation. As a result, Clarizio contended that identification of and intervention for depressed children in the schools are often inconsistent and unreliable processes.

Cultural Issues

Diagnosis of psychiatric disorders, including depression, has been found to vary across cultures (Baskin, 1984). In addition, depression differs in form, intensity, and duration across cultures (Lefley, 1990). Fabrega, Mezzich, and Ulrich (1988) found that even when age, gender, and education were controlled, the typical black depressed patient presented different manifestations than the typical white depressed patient. Manson, Shore, and Bloom (1985) found that the rate of depression for Native Americans was four to six times higher than that of the general population in the United States. They suggested that behavior considered clinically significant by the mainstream culture may be acceptable for Native Americans. It has also been reported that when data on ethnic differences in the United States were collected, disparities in hospital admission rates and length of stay for specific ethnic groups were significant (Lefley, 1990).

As a result of findings such as those mentioned above, the validity of the DSM system across different cultures has been criticized (Alarcon, 1983; Baskin,

1984; Lefley, 1990). For example, Alarcon contended that the DSM system lacks the explicit recognition of psychocultural categories and/or cultural criteria to aid in the identification of DSM categories. He recommended the addition to the existing system of an axis incorporating culture-related criteria. While addressing the Latin American population specifically, Alarcon noted that modification of the existing DSM system is necessary due to

the evaluation of the socio-economic and cultural background of the vast majority of the Latin American population, the different degree and even the quality of the stressors, and the peculiar means of adjustment to such stressors and to their surrounding circumstances, such as length of exposure, social networks, and culturally determined beliefs. (p. 104)

The most current version of the DSM system (DSM-IV) states that because culture influences the experience and communication of symptoms of depression, it is important not to dismiss an individual's symptoms merely because they are viewed as the norm within his or her culture.

Because the DSM system has cultural limitations, Westermeyer (1987) recommended that when using the DSM system for culturally different individuals, a thorough and clear understanding of symptoms is needed to assign a valid diagnostic label. In addition, a complete physical examination should be conducted to rule out biological causes for the pathology.

Developmental Issues

Although there is currently no comprehensive study examining the differences in symptomatology associated with the diagnosis of depression across children, adolescents, and adults, there have been studies clarifying developmental differences between children and adults in the manifestation of a depressive disorder (Blumberg, 1978; Cantwell & Baker, 1991; Graham, 1974; Nissen, 1973). Carlson and Garber (1986) contended that the actual number of symptoms required for a diagnosis of depression may change with age, and the actual symptoms required for a diagnosis may change. They stated that affective, cognitive, vegetative, and behavioral areas may be affected across the age ranges, yet the symptoms that define these areas may also differ with age.

Golden (1981) placed childhood depression into three distinct age categories: from birth to age five ("early"), from age six to eight ("middle"), and from age nine to twelve ("late"). However, when the term adolescents is used, it sometimes includes 12 year old or 13 year old children (Kovacs & Gatsonis, 1989; Mitchell, McCauley, Burke, & Moss, 1988).

Developmental studies have revealed that among preschool children, depression may be felt but may not be verbally expressed (Blumberg, 1978; Graham, 1974; Nissen, 1973). Manifestations of depression at this stage typically include enuresis, sleep disturbance, withdrawal, inhibited play, and excessive crying (Blumberg, 1978; Graham, 1974; Nissen, 1973). Manifestations of depression in elementary-aged children usually include low self-esteem, guilt, helplessness,

concentration and school difficulties, sleep and appetite disturbance, and sadness (Malmquist, 1975; Philips, 1979). These behavior characteristics may result in subsequent school refusal, truancy, temper tantrums, or disobedience (Graham, 1974; Krakowski, 1970). Because adolescents have the cognitive ability to hypothesize about possible alternatives and to think about the future (Rehm, Gordon-Leventon, & Ivens, 1987), their manifestations of depression tend to include anhedonia, loneliness, hopelessness, and suicidal ideation (Garfinkel & Golombek, 1974). Cantwell and Baker (1991) reported that in general, when compared to adults, depressed pre-pubertal children tend to have fewer suicidal attempts/behaviors, more social withdrawal, more irritability, and fewer verbal expressions of depression or guilt. Kovacs (as cited in Kendall et al. 1989) found that after dysphoric mood, social withdrawal most distinguished depressed from non-depressed hospitalized children; however, social withdrawal is not one of the essential criteria for a depressive disorder in the DSM system.

According to Digdon and Gotlib (1985), a biological factor may result in different symptoms in depressed adults and children. For example, they reported findings indicating that adults react differently to changes in the level of corticosteroids in the blood. Adults react by exhibiting dysphoria, whereas children evidence irritability and hyperactivity. They concluded that findings such as these lend credibility to the existence of different symptomatology in depressed children, although the etiology is the same.

Research has also demonstrated many similarities between children and adults in the manifestation of depression. For example, cognitive attributes such as attributional style, locus of control, hopelessness, and cognitive distortion, as well as overt behaviors, are similar among depressed children (Haley, Fine, Marriage, Moretti, & Freeman, 1985; Kaslow, Rehm, & Siegel, 1984; Puig-Antich, 1986). Mitchell et al. (1988) found no differences between children and adults in the symptoms of depressed mood, anhedonia, fatigue, concentration problems, agitation, initial insomnia, worrying, and hopelessness. Cantwell and Baker (1991) contended that in view of the full range of symptoms that are involved in depressive disorders, those that may differ between children, adolescents, and adults comprise only a relatively small part.

An additional difficulty that arises when identifying a depressive disorder in children involves their typical mood state, which may mask the depressive symptoms. There is evidence to indicate that the moods of children are naturally elevated compared to the moods of adults (Gittelman-Klein, 1977). It is important to realize that depressed children may not appear as sad as depressed adults when depressed simply because they seemed happier than the adults initially (Digdon & Gotlib, 1985). Depression in children may also be referred to as "masked depression" because it may manifest itself in masked symptoms that are not necessarily identifiable as "true" depression. Frequently, masked symptoms are associated with attentional disorders, hyperactivity, aggressive behavior, truancy, delinquency, temper tantrums, decreased school performance, hypochondriasis,

psychosomatic problems, and boredom (Clarizio, 1984). According to Clarizio, the underlying rationale for this view of childhood depression is that depressed feelings are replaced by maladaptive behavioral manifestations, perhaps because the child cannot tolerate prolonged feelings of sadness. Clarizio suggested, however, that these masked symptoms may actually cause depression rather than reflect a defense against it, making the concept of masked depression misleading and unnecessary.

Digdon and Gotlib (1985) pointed out that labeling a particular behavior as a manifestation of depression requires knowledge of those behaviors that are considered normal in particular age ranges. For example, behaviors associated with depression in adults (e.g., crying) may occur too frequently in children of certain ages to be considered pathological. Therefore, the prevalence of the behaviors in non-depressed children must be examined before determining the status of the behaviors as manifestations of depression.

Few studies on the cross-cultural aspects of depression in children are available (Rybolt, 1994). One study on Native American children (Red Horse, 1983) found that because Native American children are encouraged to be independent and are raised in a democratic environment, conflict with these practices may be a cause of depression in Native American school-aged children who attend public schools. In light of this finding, it is important to be cognizant of cross-

cultural differences in the manifestation of depression across the stages of development.

Assessment

Methods for assessing depression in children and adolescents include interview methods, self-reports, behavior checklists and rating scales completed by the client or others (e.g., parents or teachers), peer ratings, and projective instruments. Among the various methods, self-report behavior rating scales are the most widely used (Kendall et al., 1989). Self-reports are particularly useful in assessing depression because the primary symptoms such as sadness, feelings of worthlessness, and loss of interest in usual activities reflect subjective feelings and self-perceptions. Also, studies have demonstrated that the child is the most important source of diagnostic information for mood disorders (Angold, 1988; Fine, 1985) and that children and adolescents are capable of providing valid self-reports of depressive symptoms (Mortetti, 1985; Reynolds, 1984; Romano, 1988).

Diagnostic Interviews

The diagnostic interview is a commonly used method for assessing childhood and adolescent depression. Among the several interviews available, the most prominent is The Schedule of Affective Disorder and Schizophrenia for School Aged Children Revised (K-SADS-R) (Ambrosini, Metz, Prabucki, & Lee, 1989). The K-SADS-R is appropriate for use with children between 6 and 16 years of age and covers symptoms of depression, conduct disorders, neuroses, and psychoses. It is administered first to parents, then to the child alone, and then summary ratings are

obtained by including all sources of information. Specific criteria are given for rating the severity of each symptom. All symptoms are rated separately for the previous week and for past and current episodes. Clinical judgment is primarily used for guiding the interview. Interrater reliabilities have ranged from $r = .65$ to $.96$ for both the presence of symptoms and overall diagnosis (Ambrosini, Metz, Prabucki, & Lee, 1989).

The Diagnostic Interview for Children and Adolescents-Revised (DICA-R) (Reich & Welner, 1988) is a structured interview that has been used to assess approximately 18 DSM-III-R categories, including major depressive disorder and dysthymic disorder. This instrument can be administered to children and adolescents between 7 and 17 years of age. The DICA-R is used for the parents and the child, and response to items is in a "yes"/"no" format.

In a study comparing the K-SADS and the DICA, Carlson, Kashani, Thomas, Vaidya, and Anasseril (1987) determined that both instruments could detect affective disorders equally well. They also found that both had a tendency to overdiagnose psychopathology and concluded that more research to further examine the validity of structured interviews was needed.

Other interviews designed to assess depression in children and adolescents include the Interview Schedule For Children (ISC) (Kovacs & Beck, 1977), the Bellevue Index of Depression (BID) (Petti, 1978), and the Diagnostic Interview Schedule For Children (Costello, Edelbrock, & Costello, 1985). When using interview instruments with children and adolescents, reliability of reported symptoms

is lowest for children in the six to nine age range (Gutterman, O'Brien, & Young, 1987). Reliability of symptoms increases after 10 years of age. It has been suggested that although diagnostic interviews are useful for diagnosing a depressive disorder in accordance with the DSM-III-R (Kendall et al., 1989), additional research with structured interviews is needed to establish the validity of diagnoses assigned to children and adolescents (Young, O'Brien, Gutterman, & Cohen, 1987).

Self-Report Behavior Checklists and Rating Scales

The most widely used and researched self-report measure is the Children's Depression Inventory (CDI) (Kovacs, 1985b). This self-report instrument is designed for school-aged children and adolescents, aged 7 to 17 years, and is based on the Beck Depression Inventory for adults (Beck, 1967). It requires the lowest reading level of any measure of depression for children (Kazdin & Petti, 1982). The CDI quantifies a range of depressive symptoms that fall into one of five factors: Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia, and Negative Self-Esteem. A total test composite score (total CDI) is also calculated.

Each CDI item consists of three choices, keyed 0, 1, or 2, with higher scores indicating increased severity. For each item, the meaning of each choice can be summarized by the following: 0 = absence of symptom, 1 = mild symptom, and 2 = definite symptom. The child uses the options to rate the degree to which each statement describes him or her for the past two weeks.

The CDI total score can range from 0 to 54. Kovacs (1985b) suggested that the most appropriate cut-off point for use in general screening appeared to be a CDI

total score of 20. A raw score of 20 corresponds to a standardized T-score between 60 and 66, depending on the child's age and gender.

A large amount of research has been conducted on the CDI (see Kovacs, 1992). Studies have demonstrated internal consistency reliability coefficients from the mid- to upper-.80s (Nelson, Politano, Finch, Wendel, & Mayhall, 1987) to as high as .94 (Saylor et al., 1984). Test-retest reliability coefficients have been somewhat lower, ranging from .38 to .87 (Saylor, Finch, Spirito, & Bennett, 1984), depending on the interval between testings and the population being tested. Based on the hundreds of research studies that have utilized the CDI (see Kovacs, 1992), its validity has been well established. Kovacs reported that the CDI assesses important constructs which have strong explanatory and predictive utility in the characterization of depressive symptoms in children and adolescents.

The CDI has been useful in assessing the severity of depressive symptoms (Reynolds, 1990) and in differentiating diagnostic categories. For example, children with major depression score higher than those with other non-depressive psychiatric conditions. However, the CDI does not differentiate those less severe forms of depression from psychiatric conditions that are not in the depressive domain (Clarizio, 1984). Lobovits and Handal (1985) provided evidence for the validity of the CDI when they compared DSM-III depressed children with non-depressed children and found their CDI scores to be significantly different. These results supported the use of the CDI as a screening measure for depression.

The Children's Depression Scale (CDS) (Lang & Tisher, 1978) is a broader measure than the CDI. It includes 66 items that constitute two broad scales, depression (48 items) and positive affective experiences (18 items). The depressive scale items are divided into five subscales: affective response, social problems, self-esteem, preoccupation with own sickness and death, and guilt.

The CDS has several unique characteristics. Each of the 66 items is printed on a separate card, which is presented individually. The child reads the item, which is rated on a 1-5 point scale by placing it in one of five boxes labeled from left to right, "very wrong," "wrong," "don't know," "right," "very right." The manipulative activity forces the child to take a more active role than other self-report measures, and because the CDS is in a game-like format, children often enjoy the scale more than other self-report measures (Clarizio, 1984). The inclusion of a positive scale to measure pleasurable experiences is also a unique feature of this self-report instrument. Studies of the CDS (Kazdin, 1987; Rotundo & Hensley, 1985) have shown that the overall measure and the depression and positive affective experience scales have a high degree of internal validity (Cronbach's alpha greater than .85). The scores for the two major scales, as well as the subscales, correlate significantly with other measures of childhood depression, and the scale discriminates children who are diagnosed as clinically depressed from nonreferred samples and from clinic samples of children with other diagnoses. Test-retest reliability, based on a nonclinic sample, has been reported in the low .70s, indicating moderate reliability over a period of four weeks (Tisher & Lang, 1983).

The Reynolds Child Depression Scale (RCDS) (Reynolds, 1989) is a 30-item, self-report measure of depressive symptomatology in children aged 8 through 12 years. The RCDS is designed for the assessment of clinically relevant levels of depressive symptomatology in children, and it can be individually or group administered. The items on the RCDS use a four-point Likert-type response format. One item's response format is five "smiley-type" faces ranging from happy to sad. Internal consistency reliability for the standardization sample was .90. A test-retest reliability coefficient of .85 was reported by Reynolds and Graves (1989). In the manual (Reynolds, 1989), validity data are presented in the form of moderate correlations with other self-report and clinical interview measures of childhood depression. For example, studies have found correlations between the CDI and the RCDS ranging from .68 to .79 (all $ps < .0001$), with a median r of .72. A parallel measure, the Reynolds Adolescent Depression Scale (RADS) (Reynolds, 1986) is available for adolescents aged 13 through 19 years. The RADS is highly correlated with other self-report measures (Reynolds, 1990). Correlations have ranged from .68 to .76, with a median r of .73 (Reynolds, 1987). A study that correlated the scores on the RADS and the CDI demonstrated adequate concurrent validity ($r = .77$) when depressed adolescents 12 to 18 years of age were assessed (Shain, Naylor, & Alessi, 1990).

Interest in the negative thoughts that are characteristic of depression has led to the development of a self-report inventory to assess cognitive content. Kendall, Rowe, and Ronan (as cited in Kendall, Cantwell, & Kazdin, 1989) developed and

validated the Children's Automatic Thoughts Questionnaire (CATQ). This scale contains 42 items (thoughts) that the child reads or has read to him/her and then responds to along a dimension of frequency (1 = not at all; 5 = all the time). According to Kendall et al. (1989), initial reports on the CATQ are favorable, and they encourage use of the scale to assess cognitive content associated with depression in children and adolescents. A parallel measure, the Automatic Thoughts Questionnaire (ATQ) (Hollon & Kendall, 1980) is available for use with adults.

Despite the quality of the aforementioned self-report measures, the diagnosis of childhood depression should not rely solely on questionnaires or checklists. Although useful for research purposes, the validity of these scales for clinical usage is questionable (Clarizio, 1984). Clinical diagnosis should always incorporate information from various measures (e.g. interviews) and informants, rather than relying on individual scale scores. Kazdin (1988) indicated that although degrees of departure from the norm can be clearly delineated with behavior ratings and checklists, only diagnostic interviews specifically address criteria for reaching a psychiatric diagnosis.

Ratings by Others

Behavior ratings by parents or significant others are often used in conjunction with self-report ratings. The Personality Inventory For Children (PIC) (Wirt, Lacher, Klinedinst, & Seat, 1977) is a widely used parent-report instrument that contains clinical subscales, one of which is designed to measure depression in children. The PIC can be used for children between 3 and 16 years of age, and it is

completed by someone who has frequently observed the child. The Depression Scale on the PIC consists of 46 items related to moodiness, social isolation, crying spells, lack of energy, pessimism, concern with death and separation, serious attitude, sensitivity to criticism, indecisiveness, and uncommunicativeness. The test-retest reliability of this scale has been reported to be .94 for 34 psychiatric inpatients over a 15-day average period and .93 for 45 normal children over a two-week period (Clarizio, 1984). There are no available validity data for the Depression Scale except data indicating that the scale's scores are high for various clinical samples. In addition, when developing the PIC, Wirt and colleagues insisted that four of seven clinicians agreed that an item measured depression before including it on the Depression Scale (Clarizio, 1984).

The Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1982) is another parent-report instrument used to assess childhood depression and other clinical conditions. Although parent-report measures have been used in research (Kazdin, 1988), no single measure has been reported as having superior reliability or validity data (Kendall et al., 1989). In addition to the self-report measures designed solely for the use of parent-reporting, almost all of the self-report measures developed for children have been rephrased so parents can report on and verify the child's depressive symptoms. The rephrasing of items may be a contributing factor to the finding that little relationship exists between parents' and children's scores for the same measures, while mothers' and fathers' ratings of their children are moderately related (Kazdin, French, Unis, & Esveldt-Dawson, 1983).

Clinicians and teachers are also reliable informants regarding a child's depressive symptoms. Clinician ratings can be obtained with the Children's Depression Rating Scale (Pozanski, Cook, & Carroll, 1979). The clinician rates symptoms of depression on the basis of the child's verbal report and non-verbal and affective behaviors. Ratings by teachers are often those adapted from self-report child depression measures, as with parent-report measures.

Although theoretically, a child's self-report should be consistent with parent and teacher ratings of the child's depressive behaviors, research has demonstrated limited consistency across settings and raters. For example, Leon, Kendall, and Garber (1980) discovered a modest relationship ($r = .33$) between children's self-report of depression on the CDI and parents' ratings of children's depression on the PIC Depression Scale. They also found disagreement between parents and teachers. While parents rated depressed children as manifesting a higher frequency of behavior problems, teachers noted only more inattentive-passive behavior among depressed children. This lack of consistency between home and school may be related to one or all of the following: (1) depression in children does not possess the pervasiveness or generalizability of adult depression; (2) different assessment instruments used by children, parents, and teachers; (3) the absence of a common frame of reference for determining depressive behavior; and (4) parents may have a response set that endorses negative characteristics of their children (Leon, Kendall, & Garber, 1980).

Another interesting finding is that children consistently rate themselves as less depressed than do their parents (see Clarizio, 1984). However, it has not been determined whether children tend to underestimate their symptoms or whether adults overestimate them.

Peer Ratings

Ratings by peers offer an additional perspective of a child's depressive behaviors. Many of the symptoms of depression such as dysphoria, loss of energy, and lack of interest or involvement in activities can be easily observed by peers. Peers have the opportunity to observe a child across various settings such as the school and neighborhood, and can provide the advantage of having multiple ratings. The most widely used peer rating measure is the Peer Nomination Inventory For Depression (PNID) (Lefkowitz & Tesiny, 1980). This measure consists of 20 items tapping four areas of functioning related to depression: affective, cognitive, motivational, and vegetative. Peers respond to such questions as "Who often looks sad?" "Who plays alone?" "Who would you like to sit next to in class?" A child's own score is the sum of nominations he or she receives on each of the subscales. This scale has good internal consistency ($r = .85$) and adequate test-retest coefficients ($r = .79$) for the total depression score (Clarizio, 1984). PNID scores also correlate with school performance, self-concept, teacher ratings of work skills and social behavior, and peer ratings of happiness and popularity (Lefkowitz, Tesiny, & Gordon, 1980; Lefkowitz & Tesiny, 1985).

Projective Techniques

According to Kazdin (1981), projective techniques used in assessment involve presenting ambiguous or relatively unstructured material to the respondent.

Responses reflect underlying psychological processes depending on the specific assessment instrument and the theoretical position from which they were derived. In depression research, projective techniques have been used to measure underlying depressive fantasy in cases where overt manifestations may not be present.

Thematic picture techniques are the most widely used projective techniques with children and adolescents (Obrzut & Boliek, 1986). The Roberts Apperception Test for Children (RATC) (McArthur & Roberts, 1982) is the most recently developed thematic approach designed for children 6 to 15 years of age. According to the authors, the purpose of the RATC is to assess children's perceptions of interpersonal situations, including their thoughts, concerns, conflicts, and coping styles. The RATC consists of 27 stimulus cards, 16 of which are administered at one time. Eleven of the stimulus cards have both male and female versions and depict pictorial situations involving parental disagreement, parental affection, aggression, school, and peer and sibling relationships. The child is required to create a story about each picture, including what led up to the scene and how the story ends. There is an explicit and structured scoring system which yields eight adaptive scales and five clinical scales. The adaptive scales include (1) reliance on others, (2) support to others, (3) support of the child, (4) limit setting, (5) problem identification, and three resolution scales indicating how the child resolves particular

problems indicated in a story. The clinical scales include (1) anxiety, (2) aggression, (3) depression, (4) rejection, and (5) unresolved. The depression scale is designed to measure stories with themes of sadness, despair, and/or physical symptoms related to depression.

Standardization of the RATC was conducted on a sample of 200 "well-adjusted" children between the ages of six and fifteen years (McArthur & Roberts, 1982). According to the test authors, interrater reliability has been reported to range from .86 to .93. Discriminant validity has been obtained while examining subgroups of 200 well-adjusted and 200 clinic children. A multiple regression discriminant analysis conducted on the two groups indicated that 62% of the variance ($r = .79$) in group membership was accounted for by the 13 scales of the RATC.

McArthur and Roberts (1982) suggested that further research be conducted with younger children who are not as well adjusted as the children included in the standardization sample, and with children from various ethnic and socioeconomic backgrounds. In general, research on the RATC has been limited.

Another projective technique used for assessing children and adolescents is the Rorschach test. This instrument is a perceptual-cognitive task that measures personality processes. It consists of 10 inkblots which serve as stimuli for problem-solving situations (Weiner, 1986). In assessing depression, Weiner cautioned that the Rorschach is a measure of personality processes, not diagnostic categories. He stated "Rorschach data help to identify forms of psychopathology only to the extent that they identify personality characteristics associated with various types of

disorder" (p. 155). Wenar and Curtis (1991) maintained that results obtained with the Rorschach do not validly predict an increase in depression in children between 5 and 16 years of age. In addition, they questioned the validity of the methods used to obtain norms for depression on the Rorschach.

Projective drawings are another method for assessing inner conflicts, fears, interactions with family members, and the perceptions of others via a psychomotor response (Cummings, 1986). Specific drawing techniques that are widely used with children who are suspected of having social-emotional problems are the Goodenough's Draw-A-Man test, the Machover Draw-A-Person test, Buck's House-Tree-Person test, and Burn's and Kaufman's Kinetic Family Drawing technique (Cummings, 1986). These methods allow children to nonverbally express themselves and reveal information about impulses, anxieties, conflicts, personality, and self-concept (Koppitz, 1983). Although determining the reliability of projective drawings is a complex process, Cummings reported studies demonstrating interjudge reliability to be adequate ($r = .76, -.97$), as well as test-retest reliability ($r = .68, -.94$). Few controlled studies, however, have investigated the construct validity of depressive symptoms revealed by figure drawing techniques (Weller & Weller, 1985).

Cultural Issues and Assessment

Research on the assessment of depression in children and adolescents from different cultures is scant. Although there are a variety of valid assessment instruments available for assessing depression in children and adolescents in the

mainstream culture, the validity of depression scores for culturally diverse individuals has not been well established.

A study by Lopez (1985) compared depression scores between Puerto Rican and American children on the English and translated Spanish versions of both the RCDS and the CDI. When the CDI and the RCDS were administered to fifth, sixth, and seventh grade students in Puerto Rico (Spanish version) and the United States (English version), only the CDI yielded higher rates of depression for Puerto Rican children; the RCDS did not result in significant findings in terms of culture. In addition, the CDI scores indicated that as Puerto Rican children's age increased, depression scores decreased. The reverse was found for children in the United States. With regard to gender, females in the United States were more often depressed than males, while in Puerto Rico, more males reported symptoms of depression. Correlation between the CDI and RCDS was reported to be adequate in both Puerto Rico ($r = .65$) and the United States ($r = .75$). This study demonstrated cross-cultural inconsistencies in the assessment of depression.

Ghareeb and Beshai (1989) discovered that when a normed Arabic version of the CDI was administered to students in second through 10th grades in Cairo, Egypt, results were higher for Egyptian children than for children in Western countries (i.e., United States, Canada, Germany, and Italy). Ghareeb and Bashani suggested that to obtain a valid interpretation of depression in different cultures, depression must be interpreted according to culture-specific constructs.

Theories of Depression

A review of the literature on the etiological theories of depression revealed that most models of depression were developed primarily to explain depression in adults (Clarizio, 1984). However, childhood depression has now been recognized as a distinct clinical disorder whose defining characteristics are similar to those of adults. Therefore, theories of depression have now been applied to children and adolescents (Kaslow & Rehm, 1991). Yet Kazdin (1990) contended that it is still necessary to develop models of depression more relevant to children. In an attempt to understand the etiology of depressive disorders, the following sections will discuss the most widely researched theories: psychoanalytic, biological, behavioral, and cognitive.

Psychoanalytic Theory

Historically, the notion of depression in children was heavily disputed by psychoanalytically oriented theorists. According to Rehm et al. (1987), these theorists argued that childhood depression cannot exist on the theoretical grounds that depression is primarily a superego phenomenon and, therefore, cannot exist in children because the superego has not fully developed. Digidon and Gotlib (1985) reported, however, that more recent psychoanalytic theories do address developmental differences in the manifestation of depression. These theories attribute depression to ego rather than superego problems, suggesting that the ego is sufficiently formed in children for depression to occur. Specifically, psychoanalytic

theorists recognize depression in children, with the expression of depression varying in accordance with the child's developmental stage of ego functioning.

Psychoanalytic theorists view depression as a reaction to losing either an object or a state of well-being (Golden, 1981). The younger the child when the loss occurs, the more serious the consequences. Infants and children may remain fixated in the ego developmental stage at which the loss occurs. Feelings of sadness resulting from separation from the mother during infancy have been referred to by psychoanalysts as anaclitic depression (Kazdin, 1987). Anaclitic depression, although not recognized as the same as adult depression, does manifest itself in many of the same ways, such as withdrawal, apprehension, weepiness, retarded reaction to external stimuli, slowed movement, dejection, loss of appetite and weight, and insomnia (Kazdin, 1987).

Rochlin (as cited in Golden, 1981) criticized the notion of depression in early childhood. Although he acknowledged that young children experience painful periods of loss, mourning, and deprivation, he did not think that they maintained the sense of loss. Rather, he believed that they quickly became ready to accept a substitute for the lost object. He theorized that an individual must reach adolescence and experience separation from parents before having the ability to perceive true loss and mourning.

Whereas the young child is largely externally motivated, elementary-age children have more internalized ego functions and react with anger against themselves and have poor self-images when a loss occurs (Golden, 1981). They may use defense

mechanisms such as repression, denial, projection, somatization, and reversal of affect to deflect the depression. Arieti and Bemporad (1978) suggested that elementary-age children are prone to depression if they are rejected by others, deprived of gratification, or rewarded for behaviors that inhibit their individuation. In late childhood, those who cannot attain the parental ideal become depressed because they perceive this circumstance to be a personal failure. Repeatedly rejected older children react to their own belief that they are unlovable rather than only to the immediate pain of rejection. Depression at this stage results more from cognitive evaluation which is different from the immediate, stimulus-bound sadness of the younger child.

Biological Theory

The biological model of depression attributes depression to chemical, molecular, or genetic irregularities (Digdon & Gotlib, 1985). These irregularities may include chromosomal deformities, hormonal excesses or deficiencies, and imbalances or sensitivity of the brain's chemical transmitters (Puig-Antich, 1985). Biological aberrations may be inherited; children of parents affected by major affective disorders are at high risk (Puig-Antich, 1985). A study by Puig-Antich and colleagues (1989) compared prepubertal children having major depressive disorder with control group children and found that those children with major depressive disorder tended to come from families with affective disorders as well as alcoholism.

It has been postulated that variations of biological theories of depression exist because the theories describe different types of depressives. Digdon and Gotlib

(1985) reported that a variety of studies have demonstrated that adult depressives do not comprise a biologically homogeneous population. For example, they asserted that some depressed individuals manifest irregular EEG patterns during their sleep, while others do not. In addition, those depressed individuals with irregular EEG patterns are more likely not to have a family history of depression, whereas those with no irregular EEG patterns are more likely to have a family history of depression (Kadmas & Winokur, 1979).

The Dexamethasone Suppression Test (DST) is utilized in neuroendocrinological studies of depression. This test consists of administering oral dexamethasone and then measuring plasma cortisol levels. If cortisol levels are not lowered, faulty endocrine functioning is indicated. This test has been effective in discriminating among adults with endogenous depression, those with non-endogenous depression, and those who are non-depressed (Carroll, Feinberg, & Greden, 1981). Pozanski, Carroll, Banegas, Cook, and Grossman (1982) investigated the diagnostic utility of the DST in a group of children aged 6 to 12 years. They found that 56% of the children who were diagnosed as depressed had abnormal DST results, and 89% of the non-depressed children had normal results.

Although the DST is the most widely researched method for determining biological markers in depression, the research has focused mostly on adults. There is a paucity of DST studies on children, although the DST appears to be a valid method for determining biological markers in prepubertal children (Weller, Weller, Fristad, & Preskorn, 1984).

Sleep irregularities are a common manifestation of depression in adults. These irregularities may include decreased onset of sleep or the transition into rapid eye movement (REM) sleep, decreased delta sleep, fits of wakefulness, or increase in the frequency of eye movements during REM sleep (Digdon & Gotlib, 1985). None of these sleep irregularities, however, are common among depressed children (Puig-Antich et al., 1982). Digdon and Gotlib (1985) explained these findings in terms of maturational differences in normal sleep that interact with depression. They suggested that adult and childhood depression can be conceptualized as the same disorder, with the expression of it being affected by developmental differences that interact with the depression. They added, however, that further research on developmental differences in normal sleep is needed to determine the direct role of sleep irregularities in depression.

The biogenic amine theory of depression attributes depression to a deficiency in monoamine neurotransmitters at functionally important synapses in the brain (Richelson, 1979). Although this theory has been confirmed with adult depressives, extending the findings to children has been problematic due to results such as those by Leckman and colleagues (1980), who found that brain neurotransmitter systems typically mature during preadolescence and adolescence. Thus, this etiological theory may be applicable for explaining depression in adolescents and adults, but not so relevant for young children.

Based on the research findings presented in this section, it is clear that variability in the biological causes of depression in adults and variability of

biological causes across age groups exist. In an effort to explain this variability, Digdon and Gotlib (1985) suggested that one group of biological factors is responsible for depression in adults, while other biological factors may account for depression in children.

Behavioral Theory

Behavioral theories of depression focus primarily on the analysis of overt behavior. Rather than emphasizing underlying psychodynamic causes, behavioral approaches focus on the presence of depressive symptoms and the absence or reduced frequency of normal behaviors. Although all behavioral theorists generally believe changes in reinforcement in a person's environment are the primary etiological factors in depression, they differ in their beliefs about the type of reinforcement changes necessary for depression to occur. When Gotlib and Digdon (1985) reviewed the literature on behavioral theories of depression, they ascertained that numerous situations and factors are involved in reinforcement changes. Some situations and factors cited include the loss of the person or persons who previously supplied the reinforcement and the ineffectiveness of the depressed individual's own skills in obtaining reinforcement or in making reinforcers available. Particularly for children, acceptable behavior at one state of development may become unacceptable as the child progresses, thus resulting in the child losing reinforcement if his or her behaviors become disturbing or unacceptable to others. Coyne (1976) theorized that depressed individuals respond to stress by seeking support from other people and that depressive symptoms are in fact functional as a way of obtaining support.

Although people in the depressed person's environment may initially respond with support, when they fail to see improvement in the depressed person's symptoms, they become frustrated and may feel disappointed. The depressed person senses this and, as a result, becomes even more needy and symptomatic in an attempt to regain the support received earlier. Coyne hypothesized that this continues until the depressed person becomes isolated and withdrawn. Isolation and withdrawal often result in peer rejection, and peer rejection in childhood is related to subsequent depression in adulthood (Kohn & Clausen, 1955). A study by Kohn and Clausen (as cited in Digdon & Gotlib, 1985) concluded that almost one-third of a sample of manic-depressive adults had been socially isolated as children. Almost none of the control group of "normal" adults had been socially isolated. The researchers concluded that peer rejection and/or the lack of adequate interpersonal skills in childhood may be closely related to the later emergence of depressive symptoms.

Although there have been no systematic studies of social skills deficits in depressed children, there is evidence that suggests poor social skills and poor peer relationships are associated with a variety of problems that occur in childhood, as well as adulthood (Kaslow & Rehm, 1991). According to Combs and Slaby (1977), social skill is defined as "the ability to interact with others in a given social context in specific ways that are societally acceptable or valued and at the same time personally beneficial, or beneficial primarily to others" (p. 162). Social skills deficits related to depression in children would be those specific skills that are

effective in eliciting consistent and enduring contingent positive reinforcement from significant others in the social environment.

Lewinsohn (1974) theorized that the etiology of depression involves a lack of response-contingent positive reinforcement that may be the result of a reinforcement-poor environment or an environment that changed, thereby eliminating prior reinforcement. According to Lewinsohn, depressed individuals tend to be in environments that do not offer the possibility of obtaining positive reinforcement. Although, as previously mentioned, lack of appropriate social skills may be a contributing factor to the lack of positive reinforcement, Lewinsohn contended that by increasing the activity levels of depressed individuals, positive reinforcement may become more readily available in their environments. By increasing pleasant or rewarding activities, it is possible to increase the general level of response-contingent reinforcement in an individual's life, and Lewinsohn assumed that this would produce a general reduction in depressive symptoms.

Cognitive Theories

Cognitive theories in general postulate that distorted thinking is central in the etiology of the depression and that the affective, motivational, and physical symptoms are the result of the cognitive distortions (Clarizio, 1984). It is hypothesized that the depressed individual holds the self-perception that he or she is deficient, inadequate, and unworthy and that the world is overly demanding, and the future holds only continued suffering (Kovacs & Beck, 1977). Depressed individuals distort reality to fit their perceptions (Beck, 1967). They overgeneralize,

minimize positives, exaggerate, misinterpret, and make absolute judgments (Emery, Bedrosian, & Garver, 1983).

A review of the literature indicated that the most widely held cognitive views of the etiology of depression are based on Beck's (1967) cognitive theory, Seligman's reformulated learned helplessness theory (Abramson et al., 1978), and Rehm's (1977) self-control theory. These theories are reviewed in this section.

Beck's Cognitive Theory. Beck's (1967) cognitive view of depression is based on the assertion that the majority of depressive symptoms stem from the depressed individual's negative and distorted thinking. Three specific cognitive structures are seen as central in the development of depression: the cognitive triad, schemata, and cognitive errors (Beck, Rush, Shaw, & Emery, 1979). The cognitive triad in depression is comprised of three cognitive patterns through which the depressed person experiences a negative view of self, the world, and the future (Kovacs & Beck, 1977). The depressed person views him or herself as inadequate and defective; the world is demanding and filled with obstacles and the future holds only prolonged suffering. The individual's schemata leads to the systematic filtering or distortion of stimuli that he or she confronts. Because these schemata are stable cognitive patterns that mold incoming information (Beck et al., 1979), it is believed that this leads to depressed individuals clinging to painful attitudes about themselves despite objective evidence refuting them. Cognitive errors lead to a depressed individual's exaggerated sense of responsibility and self-reproach. These errors may include magnifying or misinterpreting events, making absolute judgments,

overgeneralizing from a single occurrence, centering on a particular detail out of context and overlooking the more obvious features of the situation, or drawing illogical references. In general, Beck's theory posits that depression results from lifelong habits of conscious thought, and if the habits of thought are changed, depression will be relieved. Beck's cognitive therapy approach, therefore, tries to change the way the depressed individual thinks about failure, defeat, loss, and helplessness (Seligman, 1990).

Although the etiological aspects of Beck's (1967) theory (e.g., how early stressors lead to distorted cognitions) are not well articulated, Beck (as cited in Arieti & Bemporad, 1978) has implied that the etiology of the negative triad may be in response to perceived loss or rejection. The findings of a retrospective study (Crook, Raskin, & Eliot, 1981) also suggested that depression in adult life may be related to parental rejection and control techniques such as derision, negative evaluation, and withdrawal of affection in childhood. These findings are consistent with Beck's assertion that thoughts of worthlessness seen in depression have their origins in early child-parent interactions. Still, specific cause-and-effect relationships are not clear.

Research on depressed adults by Beck and his colleagues (as cited in Clarizio, 1989) focused on the effects of success and failure, perceptual distortion, memory distortion, and negative expectations. Studies have provided little evidence for supporting the prediction of differential effects of success and failure or the perceptual distortion hypothesis; however, support has been found for Beck's

prediction of forgetting more pleasant information and being less selective in forgetting unpleasant information (Lewinsohn & Hoberman, 1982). Other investigations with depressed adults have provided empirical support for Beck's model (DeMonbreun & Craighead, 1977; Gotlib, 1981, 1983; Gotlib & McCann, 1984).

Although Beck did not directly study depression in children, he suggested that his model could be appropriate for the study of childhood depression (Kovacs & Beck, 1977). Research on the cognitive aspects of depressed children and adolescents has in fact supported Beck's (1967) findings with adults, reporting distortions in attributions, self-evaluation, and perceptions of past and present events (Kendall, 1993). For example, a study by Kendall, Stark, and Adam (1990) asserted that the cognitive functioning of depressed children was characterized more by negative self-evaluations against normal standards than by a lack of active information processing, thus supporting the theory that cognitive distortion, not cognitive deficiencies, characterize the nature of the cognitive disturbance in childhood depression.

Seligman's Learned Helplessness Theory. According to the original learned helplessness theory (Seligman, 1975; Maier & Seligman, 1976), experience with uncontrollable events can lead to the expectation that no available response will control future outcomes. This expectation of no control leads to deficits referred to as learned helplessness deficits. Specifically included are motivational deficits (lowered response initiation and lowered persistence), cognitive deficits (inability to

perceive existing opportunities to control outcomes), and in humans. emotional deficits (sadness and lowered self-esteem) (Nolen-Hoeksema, Girgus, & Seligman, 1986).

Seligman (1975) theorized that there were similarities between the learned helplessness deficits and the motivational, cognitive, and emotional deficits of human depression, and at least some depressions may be the result of expectations that important outcomes cannot be controlled. However, this theory had some important inadequacies:

1. It could not explain when helplessness deficits would be stable in time and when they would be unstable.
2. It could not explain when helplessness deficits would generalize to various domains of outcomes and when they would be specific to one domain.
3. It could not explain why people lose self-esteem when they perceive they are helpless.
4. The theory could not account for individual differences in humans' susceptibility to helplessness (Nolen-Hoeksema et al., 1986).

To account for the inadequacies in the original learned helplessness theory, Abramson, Seligman, and Teasdale (1978) proposed a reformulated theory of learned helplessness. According to this reformulation, the attributions people make or explanations they give for good and bad outcomes influence their expectations about future outcomes, which, in turn, influence their reactions to outcomes. Whereas learned helplessness is the giving-up reaction, the quitting response that follows from

the belief that what you do doesn't matter, explanatory style is the manner in which you habitually explain to yourself why events occur (Seligman, 1990).

The relationship between learned helplessness and attributions in children was initially examined by Dweck and Repucci (1973). They found that children whose performance deteriorated most following experimenter-induced failure made more external attributions (i.e., attributing both failure and success less to effort) for the outcome than did children who maintained or improved their performance. These findings were corroborated by Diener and Dweck (1980), indicating that helplessness-related deficits are often associated with external attributions.

Abramson et al. (1978) expanded on this attribution theory and proposed three dimensions along which explanatory style can vary which influence the helplessness deficits following an event. First, causes can be stable in time, or they can be unstable. If the individual explains a bad event by a cause that is stable rather than unstable in time, she or he will expect bad events to recur in the future, and helplessness deficits will be chronic. Second, causes can have effects in many areas of an individual's life, or they can affect only one area. If a person explains a bad event by a cause that has global effects instead of by a cause that influences only that specific event, she or he will expect bad events to occur in multiple settings, and helplessness deficits will generalize across multiple settings. Third, causes can either be internal or external to the individual. If a person explains a bad event by a cause internal to her or himself rather than external, he or she will be more likely to exhibit lowered self-esteem. Abramson et al. (1978) postulated that people who

habitually explain bad events by internal, stable, and global causes (and explain good events by external, unstable, and specific causes) will be more likely to experience general and lasting symptoms of helplessness than will people with the opposite explanatory style. Abramson et al. applied this reformulated helplessness theory to depression and predicted that habitual explanations of bad events by internal, stable, and global causes will make individuals more prone to depressive episodes than individuals without this maladaptive explanatory style. This reformulated model is a diathesis-stress model, in which a bad explanatory style is viewed as a factor that predisposes an individual to helplessness and depression in the face of bad events (Nolen-Hoeksema et al., 1986).

Numerous studies have supported the contention that attributional style in depressed children is similar to that of depressed adults and different from that of non-depressed children (Bodiford, 1988; Kaslow et al., 1984; McCauley, Mitchell, Burke, & Moss, 1988; Meyer, Dyck, & Petrinack, 1989; Robins, 1989; Seligman et al., 1984). Nolen-Hoeksema et al. (1992) conducted a five-year longitudinal study that investigated the interrelationships among children's experiences of depressive symptoms, negative life events, explanatory style, and helplessness behaviors in social and achievement situations. This study resulted in the following findings:

1. Early in childhood, negative events, but not explanatory style, predicted depressive symptoms.

2. Later in childhood (middle school age), a pessimistic explanatory style appeared as a significant predictor of depressive symptoms, alone and in conjunction with negative events.

3. When children suffered periods of depression, their explanatory styles not only deteriorated but remained pessimistic even after their depression subsided.

4. Some children appeared repeatedly prone to depressive symptoms over periods of at least two years.

5. Depressed children consistently showed helpless behaviors in social and achievement settings.

Based on these findings, Nolen-Hoeksema et al. (1992) concluded,

Early in childhood, major life events are more important to the development of depression than explanatory style; later in childhood, explanatory style predicts depression, and negative life events predict when depression will occur only in the presence of a pessimistic explanatory style. Helplessness behaviors have not been found to predict when depression will occur, although they do accompany depression when it does occur. Negative life events rather than explanatory style may be the major predictor of depression during early childhood because younger children's explanatory style is still open to change or because cognitive processes are generally unrelated to well-being at those ages. Even if a child does not have a pessimistic explanatory style before becoming depressed, the

experience of a period of depressive symptoms can lead the child to develop a more pessimistic explanatory style, which remains after his or her depression subsides. Once children develop a pessimistic explanatory style, they are at risk for additional periods of depression over time and become prone to chronic moderate depressive symptoms. (p. 418)

Consistent with these developmental findings are the results of a study by Rholes, Blackwell, Jordan, and Walters (1980) which demonstrated that following failure, fifth grade children were more likely than kindergartners or first or third graders to manifest helplessness-related attributions and behaviors. Digdon and Gotlib (1985) suggested, after reviewing relevant research, that the negative self-concept symptom typically found in depressed adults may be non-existent in children younger than approximately eight years of age. They asserted that young children's attributions are dramatically different from those of older children and adults. These findings and the more recent findings of Nolen-Hoeksema et al. (1992) underscore the importance of developmental factors when considering the etiology of depressive disorders.

Seligman et al. (1984) investigated the attributional style of children aged 8-13 years to determine the origins of a child's attributional style. When asking the question "Do children learn their attributional style from their parents" (p. 237), they found that (a) a mother's composite attributional style for bad events correlated with her child's composite style for bad events and with her child's depressive symptoms

(b) a mother's depressive symptoms correlated with her child's depressive symptoms, and (c) a father's attributional style and depression were not related to the scores of his spouse or their child. Based on these results, Seligman et al. suggested that the child may learn attributional style and/or depressive symptoms from the mother, and these may then sustain each other.

Dweck (1975) reported that an attribution retraining procedure which emphasized the importance of making effort attributions (attributing failure to lack of effort) was effective in reducing performance deterioration following failure experiences in a sample of fifth grade children. The children also showed an increase in the degree to which they emphasized lack of effort versus lack of ability as a determinant of their failure. Dweck's attribution retraining program demonstrated that an adaptive coping response can be taught as an alternative to helplessness in children (Kaslow & Rehm, 1991). Other studies have found that explanatory style is an important component in successful outcome of cognitive therapy with depressed adults (DeRubeis et al., 1990; Seligman et al., 1988).

Rehm's Self-Control Theory. Rehm (1977) postulated a self-control model of depression that involved a sequence of related but semi-independent behaviors that were viewed as being central to depression. Specifically, negative self-evaluations, low rates of self-reinforcement, and high rates of self-punishment were seen as leading to typical behavior of depressed individuals. With regard to the concept of self-control, Rehm contended that individuals can have deficits in three processes: (1) self-monitoring, (2) self-evaluation, and (3) self-reinforcement. Two specific

types of self-monitoring problems may be evident (Kaslow & Rehm, 1991); attending to negative events, while ignoring positive events and focusing on the immediate rather than the later consequences of behavior. Maladaptive self-monitoring is believed to result in a negative view of self, the world, and the future. The two maladaptive patterns in self-evaluation involve setting unrealistically stringent self-standards and inaccurate attributions of success or failure. Strict evaluation criteria are thought to cause lowered self-esteem and feelings of helplessness. Deficits in the area of self-reinforcement involve extreme self-punishment and inadequate self-reinforcement. A lack of self-reinforcement is associated with low activity levels and a lack of initiative, while excessive self-punishment usually involves a high rate of self-critical comments and other forms of self-directed hostility. Kaslow and Rehm reported a study in which children's self-control behavior was evaluated by having them complete a questionnaire before and after a task. Within a group of normal children, those who reported more depressive symptoms expected to do more poorly, had a more negative evaluation of their performance, set more stringent standards for what was considered failure, perceived their mothers as setting more stringent standards for what was considered failure, and indicated that punishment was preferable to reward in controlling children's behavior.

Treatment Models

A review of the literature indicated that the various treatment approaches for childhood and adolescent depression are primarily based on biological, behavioral,

and cognitive etiological theories of depression. The following section reviews various psychological treatment models that are based on the aforementioned theories.

Biological Treatment

When biological theories of etiology are applied to the treatment of depression, the choice approach is primarily psychopharmacological in nature. The primary pharmacological agents used in the treatment of major depression are heterocyclic antidepressants (tricyclic and new antidepressants) (Waterman & Ryan, 1993). Many hypotheses about the biological etiology of depressive disorders have been based on how neurotransmitter systems are affected by antidepressant medications, thus correcting biochemical imbalances (Waterman & Ryan, 1993). It is believed that the brain systems involved in depressive disorders are the noradrenergic systems and/or the serotonergic systems. In these systems, norepinephrine and serotonin, respectively, are the primary neurotransmitters and are thus targeted for intervention. Antidepressant medications affect an individual's biochemistry similarly by blocking the reuptake of norepinephrine and/or serotonin after it has been released from the presynaptic neuron, which has the effect of increasing the impact of these neurotransmitters in the synapse. Waterman and Ryan (1993) reported that "three decades of work further examining those systems certainly has contributed a vast body of knowledge suggesting that one or both systems are strongly involved in affective disorders, but, at present, the pathophysiology of major depression remains unclear" (p. 231).

There is a paucity of controlled research studies regarding the use of antidepressants for the treatment of depression in children, and, therefore, their efficacy for this population remains unestablished. It has been reported, however, that approximately 75% of all children treated with tricyclic medication in open, uncontrolled trials prior to 1979 responded positively (Rancurello, 1985). In controlled studies, a common research method used involves measuring the plasma levels of subjects given a fixed (weight adjusted) dose of an antidepressant, with the plasma levels varying from subject to subject. Changes in subjects are determined by examining the relationship between plasma level and clinical outcome. Several studies (Preskorn, Weller, & Weller, 1982; Puig-Antich et al., 1987) employing this method have provided evidence for the efficacy of antidepressants in prepubertal major depression. For example, in a study by Puig-Antich and Weston (1983), antidepressant and placebo conditions produced similar effects in the treatment of depressed children. However, significant differences were found in the medication condition when the group was divided according to median plasma level of the antidepressant medication. Children with higher levels of medication showed 100% response to treatment, whereas those with lower levels showed a response of 33%. The researchers concluded that treatment effects are dependent upon a steady-plasma level beyond a particular threshold.

Another method used in controlled studies of prepubertal children involves comparing an active medication to a placebo in two different matched groups in a double blind study. These studies (Geller, Cooper, & McCombs, 1989; Puig-Antich

et al., 1987) failed to demonstrate the superiority of medication over the placebo. There are indications, however, that some individuals may respond better than others to antidepressant medications (Preskorn, Weller, & Hughes, 1987). For example, in a study by Puig-Antich et al. (1987), the subtype of depression affected treatment outcome. They found that depressed children with psychotic symptoms responded consistently less well to medication and required higher plasma levels of medication to obtain positive treatment effects. This study, therefore, demonstrated that both plasma level and type of depression may be related to treatment outcome.

Studies do not provide the same support for antidepressant medications for adolescents as they do for children. For example, Ryan et al. (1986) failed to find evidence of a plasma level/clinical response relationship with depressed adolescents treated with imipramine. In this study, fewer than 50% responded well to the medication, and symptom reduction was not associated with plasma levels of imipramine. Waterman and Ryan (1993) cited a study which found an almost significant trend ($p < .06$) for subjects on imipramine with higher plasma levels to do better than those with subtherapeutic plasma levels. Ryan et al. suggested that the sex hormones introduced during adolescence may interfere with the antidepressant effects of imipramine.

One study did discover a broad range of beneficial effects using imipramine for depressed children aged 5.5-16 years. Wilson and Staton (1984) found improvements in neuropsychological functioning and in symptom reduction evidenced by a variety of externalizing and internalizing behaviors.

The equivocal outcomes of some of the studies with children and adolescents contrast with those demonstrating efficacy of psychopharmacological treatment with adults. It has been hypothesized that the failure of some of the studies involving children and adolescents may have resulted from methodological inadequacies, including small sample sizes, differing choices of medications and dosages, and inclusion of groups of subjects less likely to show a response to medication (Waterman & Ryan, 1993). Rancurello (1985) suggested that children tend to exhibit developmentally dependent differences in how they distribute, metabolize, and excrete drugs, and these mechanisms distinguish them from adults. Despite the methodological problems in research studies and the subsequent lack of significant findings, the use of psychopharmacological medication has made a difference for some depressed children and adolescents (Weller & Weller, 1986), and, therefore, the utility of these medications should not be dismissed. However, it should be noted that medication is almost never appropriate as the sole intervention for the entire therapeutic course of a child or adolescent (Dulcan, 1985).

Behavioral Treatment

Treatment approaches based on behavioral theories focus primarily on ways to promote effective reinforcement changes in the depressed person's environment. In the following section, two behavioral approaches to the treatment of depression in children, social skills training and contingency management, are reviewed.

Social Skills Training. According to Kaslow and Rehm (1991), social skills training procedures with children have mainly involved the following strategies: (1)

shaping procedures that use adult reinforcement, (2) modeling or combined modeling and reinforcement procedures, and (3) direct training procedures to make use of the child's cognitive and verbal skills. More specific strategies include instructions, modeling, role playing, rehearsal, feedback, and self-management techniques.

A study of a social skills intervention by Schloss, Schloss, and Harris (1984) used a multiple baseline design on three depressed adolescents (ages 15-18 years). Intervention consisted of interpersonal skills training, which focused on teaching them how to talk politely in the school setting. Techniques involved modeling, behavioral rehearsal, feedback, and social reinforcement. Findings indicated significant increases in the frequency of appropriate target behaviors. In a study by Bornstein, Bellack, and Hersen (1977), a social skills training approach was implemented with four children (ages 8-11 years) who were referred by their teachers because they were shy, passive, unassertive, and conforming. The children were also found on assessment to be deficient in at least three of the following behaviors: eye contact, duration of speech, ability to make requests, and audible responses. Intervention consisted of modeling, feedback, discussion, specific instructions, and continued rehearsal until criterion was reached. Results indicated marked improvement in assertiveness, with gains being maintained at two- and-four week follow-up evaluations.

Matson and colleagues (1980) studied the observation and generalization effects of social skills training with four emotionally disturbed, depressed children. Instruction, information feedback, modeling, role playing, and social reinforcement

were used. Results from the study indicated that social skills training effects were immediate when taught by an adult, but peer observation of appropriate social skills was not effective. Also, the more skilled the subject was initially, the more he/she improved with treatment. Booster sessions were helpful in maintaining treatment gains. Furthermore, the social skills taught in groups appeared to be effective for three of the children, enabling them to use their new skills in similar social situations in their natural environment.

Overall, it appears that social skills training is an effective approach for depressed children who evidence social skills deficits. Because social skills are only one area of deficiency in depressed individuals, it should be included only as part of a multimodal approach in the treatment of childhood depression.

Contingency Management. With contingency management approaches to the treatment of depression, programs designed to increase activity level are implemented to raise the amount of positive reinforcement in a depressed individual's environment. The therapeutic implication is that improvement should follow from an increase in positive reinforcement; if the loss of response-contingent reinforcement is a significant antecedent in depression, then the change in mood may occur by having individuals engage in events they view as pleasant. When treating children, it is assumed that they have the social skills to produce the behavior but that their performance is lacking. Specifically targeted for intervention are behaviors/activities that were engaged in with enjoyment in the past. Observation of a significant decrease in the level of a particular activity associated with the onset of

depression is assumed to be supportive evidence of the program (Kaslow & Rehm, 1991). A behavior/activity may be targeted if it can be demonstrated to be associated with improved mood. In the adult literature (e.g., Lewinsohn, Biglan, & Zeiss, 1976), self-report events schedules consisting of lists of potentially rewarding activities have been used to identify targets for intervention. Reinforcement surveys or pleasant event schedules designed for use with children are utilized to identify people, places, things, and activities that are incompatible with feelings associated with depression. When implementing activity-increase programs, the Premack principle may be applied such that more frequent positive behaviors may be used to increase the frequency of less-probable (but desirable) behaviors. Activity increases may occur when the activities are scheduled, or self-managed reinforcement programs may be implemented.

There are no reports in the literature of activity increase programs as the sole treatment of depression in children. External reinforcement procedures have been used only as a part of larger therapy programs. However, behavioral approaches used to treat social withdrawal may be viewed as examples of activity increase programs for social interaction (Kaslow & Rehm, 1991). Programs of this type have been successful (see Weinrott, Corson, & Wilchesky, 1979).

Cognitive-Behavioral Treatment

The cognitive-behavioral approaches in the treatment of depression emphasize the role of cognition in determining an individual's feelings and behavior.

Cognitive-behavioral therapeutic approaches focus on having individuals identify and

correct distortions in thinking and the associated beliefs that result. Kaslow and Rehm (1991) listed the techniques typically used to accomplish this: (1) recognizing the relationships among cognition, affect, and behavior; (2) monitoring negative thoughts; (3) examining the evidence for and against these thoughts; (4) substituting more realistic interpretations for negative ones; and (5) identifying and changing dysfunctional beliefs. Although it has been demonstrated that depressed children do manifest cognitive symptoms that are analogous to those of adults, it is important to account for a child's level of general cognitive development when employing a cognitive-behavioral approach. Kaslow and Rehm pointed out that children's capacity to cope with various kinds of problems or adjust to new situations may vary according to their level of development. Consequently, intervention should be aimed at strengthening coping skills at the specific levels of development.

Therapies based on cognitive-behavioral techniques have proven effective in treating depression among adults (Beck, Hollon, Young, Bedrosian, & Budenz, 1985). Beck's (1967) cognitive approach in the treatment of depression in adults has not been applied directly to children; however, variations of his approach have been implemented.

The use of Beck's (1967) approach with children has been questioned (Digdon & Gotlib, 1985). According to Digdon and Gotlib, the first step in cognitive therapy from Beck's perspective is an assessment of the negative cognitions that are influencing the depressed person, a procedure which involves verbalization of the thoughts. The second step involves encouraging the depressed

person to reflect on his or her negative thoughts and to replace them with thoughts that are more positive. The third and final step is self-monitoring of thoughts. The major difficulty with using Beck's model with children is that it relies primarily on verbal communication. Because abstract thoughts and topics are difficult for young children to communicate, this mode of treatment may not be effective until a child is able to do so. Again, as with any other treatment, consideration of developmental factors is crucial to the outcome of this model of treatment.

A review of the literature revealed two cognitive-behavioral treatment approaches applicable to school-aged children, Seligman's Learned Optimism Approach (1990) and self-control models. These two treatment models are reviewed in the remainder of this section.

Seligman's Learned Optimism Approach. A cognitive-behavioral treatment approach based on the reformulated learned helplessness theory and referred to as "learned optimism" was described in detail by Seligman (1990).

Learned optimism is not a rediscovery of the "power of positive thinking." The skills of optimism do not emerge from the pink Sunday-school world of happy events. They do not consist of learning to say positive things to yourself. We have found over the years that positive statements you make to yourself have little if any effect. What is crucial is what you think when you fail, using the power of "non-negative thinking." Changing the destructive things

you say to yourself when you experience the setbacks that life deals all of us is the central skill of optimism. (p. 15)

Essentially, the learned optimism cognitive-behavioral approach trains individuals to create an optimistic explanatory style, and in turn, to prevent depression. It prevents depression by teaching the skills needed to recover from defeat. According to Seligman (1990), learned helplessness becomes full-blown depression when the individual who fails is a pessimist. He contended that in optimists, a failure produces only brief periods of demoralization. The learned optimism approach involves applying basic principles to change from pessimistic thinking to optimistic thinking. These basic principles involve identifying your own pessimistic explanations and changing them through techniques referred to as disputation, distraction, and distancing. To date, there is only one published research study measuring the efficacy of this approach with depressed school-aged children (Gillham, Reivich, Jaycox, & Seligman, 1995).

While using the learned optimism approach with children, levels of optimism and pessimism can be measured through the use of the Children's Attributional Style Questionnaire (CASQ) (Seligman et al., 1984). This questionnaire includes 48 items, each of which consists of a hypothetical good or bad event involving the child and two possible causes for the event. Respondents choose the cause from the pair that better describes the reason for the event. Sixteen questions pertain to each of the three dimensions (internality, stability, and globality). Half of the questions request explanations for good events, and half question the cause of bad events. Subscales

are formed by summing scores across the appropriate questions for each of the three causal dimensions, separately for good events and for bad events. The CASQ is reported to be the most widely used measure of explanatory style in children between the ages of 8 and 12 (Seligman, 1990).

Self-Control Models. Verbal self-instruction training (Meichenbaum, 1977) is a specific strategy for improving overall self-control in children. Verbal self-regulation is a method of self-control whereby the verbalizations are intended to increase the probability of the corresponding overt behavior. Self-instructional training has been described as a method of teaching children to monitor their progress, to compare what they are doing with what they should be doing, and to self-reinforce contingently (Cole & Kazdin, 1980). Self-verbalizations are developed through modeling, overt and covert rehearsal, prompts, feedback, and reinforcement.

Cole and Kazdin (1980) noted the advantages of self-control strategies as a treatment approach: (1) they can interrupt or inhibit a sequence of thoughts or actions, (2) verbal self-instruction draws upon a natural developmental process whereby children use their verbal behavior to regulate thoughts and actions, and (3) they provide general coping skills rather than situation-specific responses.

Although self-control methods have not been used specifically with depressed children, studies that demonstrate their effectiveness with children in general (Ballard & Glynn, 1975; Bolstad & Johnson, 1972). Further, studies have shown that procedures designed to train a child to self-monitor have led to changes in the

frequency of the target behavior (Gottman & McFall, 1972; Sagotsky, Patterson, & Lepper, 1978).

Clarizio (1989) raised the following issues regarding the utility of self-control strategies, particularly with depressed children. First, it is necessary to determine which depressed symptoms will be targeted for elimination (e.g., somatic complaints, guilt). Second, there is a need for standardized methodologies to evaluate self-control deficiencies in depressed children systematically. Third, studies are needed to demonstrate that the reversal of specific self-control problems do, in fact, overcome depression in children. Self-control strategies hold promise as a therapeutic approach in the treatment of depressed children; however, more research is necessary to determine the extent of their efficacy.

Research on School-Based Cognitive-Behavioral Approaches

There is a paucity of school-based studies addressing the efficacy of cognitive-behavioral interventions with depressed children and adolescents. The five school-based studies that do appear in the literature lend support to the effectiveness of short-term cognitive-behavioral treatments. These studies are presented in the following section.

Butler et al. (1980) compared the relative efficacy of role-play, cognitive restructuring, attention placebo, and waiting list conditions using fifth and sixth grade students who were identified as depressed based on self-report ratings and teacher ratings. The role-play treatment condition focused on facilitating social interactions, problem solving, and sensitizing the child to the thoughts and feelings

of self and others. The members of the cognitive restructuring treatment group were taught to identify their irrational beliefs, enhance their listening skills, adapt their listening skills to their irrational beliefs, and discover the relationship between thoughts and feelings. Students in the attention-placebo condition were taught via the group investigation model of teaching. The results of this study indicated that both the role-play and the cognitive restructuring treatments were effective, with the role-play condition appearing to be most effective.

Reynolds and Coats (1986) compared the effectiveness of a cognitive-behavioral approach and relaxation training among a group of senior high school students who were identified as depressed based on self-report ratings. The subjects were randomly assigned to one of three groups. The cognitive-behavioral treatment group was taught self-control skills with an emphasis on monitoring, self-evaluation, and self-reinforcement skills. The relaxation training group focused on teaching subjects how to relax specific muscle groups. A wait-list control group did not receive treatment until follow-up. The results of this study indicated significant decreases in depressive symptoms reported by subjects in the two active treatment groups when compared to the wait-list control group. However, no differences were found between the two treatment groups. Improvement in both treatment groups was found to be maintained at a five-week follow-up.

Kahn et al. (1990) replicated the Reynolds and Coats (1986) study using a different population of subjects. In this study, the efficacy of short-term cognitive-behavioral therapy, relaxation training, and self-modeling interventions was

investigated. Subjects consisted of sixth, seventh, and eighth grade students who were identified as moderately to severely depressed based on self-report ratings, interviews, and parent ratings. The students participated in one of three short-term, intensive intervention programs, and there was a wait-list control group. In the cognitive-behavioral treatment group, subjects were instructed in specific skills and strategies to cope with depression-related problems. These skills included constructive thinking, self-reinforcement, pleasant events scheduling, and social skills. The relaxation treatment group was provided training in progressive relaxation techniques and generalization procedures, including home practice activities. The self-modeling treatment condition was based on the findings that behavioral, cognitive, and affective changes can result from the repeated observation of oneself on edited or rehearsed videotapes showing only desired target behaviors.

In this study, target behaviors included eye contact, body posture, positive affect-related expression, and verbalizations of positive prosocial attributions in various domains. The results of this investigation again provided support for the efficacy of all three interventions in the treatment of depression in adolescents. A one-month follow-up indicated that subjects maintained the treatment gains. When the authors visually inspected the data for qualitative differences, they found that the data were particularly compelling for the cognitive-behavioral treatment group. Their data indicated that nearly twice as many subjects in this group scored in the functional range on the posttest measures than did those in the self-modeling group, and nearly all of these subjects maintained their gains on follow-up.

A study conducted by Stark et al. (1987) investigated the relative efficacy of self-control therapy and behavioral problem-solving therapy with depressed children in grades four, five, and six. The students were assigned to a self-control, behavioral problem-solving, or waiting-list condition. The self-control group was taught self-management skills. The behavioral problem-solving group intervention combined self-monitoring, pleasant activity scheduling, and the acquisition of problem-solving skills relating to social behavior. At post-treatment, subjects in both active treatment groups reported significant improvement on self-report and interview measures of depression, while subjects in the waiting-list condition reported minimal change. Follow-up results suggested that the treatment effects generalized across time.

More recently, Gillham, Reivich, Jaycox, and Seligman (1995) reported a study utilizing the learned optimism treatment approach with a group of fifth and sixth graders who were identified as at-risk for depression. The participants were taught cognitive and social problem-solving techniques designed to prevent depressive symptoms and were compared with a matched no-treatment control group. The results of the study showed that the children who participated in the prevention program reported significantly fewer depressive symptoms than those in the control group. These findings were maintained at a six-month follow-up and at a two-year follow-up. Assessment of the children's explanatory style found that the treatment program improved explanatory style, and changes in explanatory style correlated with changes in depressive symptoms.

The preceding studies appear to support the utility and efficacy of cognitive-behavioral treatment approaches for depressed children and adolescents in school settings. In addition, the existing literature clearly suggests the importance of implementing treatment within interpersonal and social contexts. The schools provide an ideal setting for intervention of depression in children and adolescents, not only because children spend a large portion of time at school, but because the school is a personal performance, cognitive task and peer social milieu (Hart, 1991). Depressive symptoms unrecognized by school staff may be a significant factor contributing to the lack of remediation of underachievement and behavior problems in certain school-aged children, thus supporting the contention that childhood depression should be addressed in the schools. Despite these current views, treatment outcome studies outside of clinical environments have not kept pace (Kendall, 1993). Based on the amount of research conducted to date, there is clearly a need for further studies of school-based, cognitive-behavioral intervention approaches for depressed children and adolescents.

CHAPTER 3

METHOD

Participants

Permission for this study was obtained from the Assistant Superintendent of a medium-size school district in Tucson, Arizona. Permission was also obtained from the principal of the middle school where the subjects were recruited. Teachers in the middle school were notified of the nature of the study and were given the opportunity to ask any questions or express any concerns they had regarding the study. A detailed letter was sent to the parents of all sixth grade students at the middle school informing them that their child may be participating in the learned optimism program. This letter described the nature of the learned optimism program and the nature of the research being conducted. It also indicated that parents must provide signed consent for their child to participate (see Appendices A, B, and C). Six parents denied permission.

Two hundred one (201) sixth grade students served as participants for this study. All participants attended the same middle school in a low-socioeconomic area within the school district. The participants included a mixture of Caucasian, Black, and Hispanic students, but the majority were Caucasian. All participants' primary language was English. Males and females were equally represented.

The participants were divided into four groups. Placement into a group was determined by the class in which the student was enrolled during a particular class period (e.g., Social Studies, fifth period). All learned optimism groups met during fifth or sixth period. Group 1 was a treatment group (learned optimism program), Group 2 was an attention-placebo group, Group 3 was a delayed-treatment group, and Group 4 was a no-treatment control group. The assignment of subjects to experimental groups based on class periods ensured that demographic characteristics were equally represented among experimental groups.

Dependent Measures

All participants completed the Children's Depression Inventory (CDI), a 27-item self-report measure of severity of depressive symptoms (Kovacs, 1985b). This self-report instrument is designed for school-aged children and adolescents aged 7 to 17 years. It is based on the Beck Depression Inventory for adults (Beck, 1967). The instrument requires the lowest reading level of any measure of depression for children (Kazdin & Petti, 1982). The CDI quantifies a range of depressive symptoms that fall into one of five factors: Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia, and Negative Self-Esteem. A total test composite score (CDI total) is also calculated.

Each CDI item consists of three choices, keyed 0, 1, or 2, with higher scores indicating increased severity. For each item, the meaning of each choice can be summarized as follows: 0 = absence of symptom, 1 = mild symptom, 2 = definite

symptom. The child uses the options to rate the degree to which each statement describes him/her during the past two weeks.

The CDI total score can range from 0 to 54. Kovacs (1992) suggested that the most appropriate cut-off point for use in general screening appeared to be a CDI total score of 20. A raw score of 20 corresponds to a standardized T-score between 60 and 66, depending on the child's age and gender. However, Kovacs added that lower cut-off scores may be appropriate with other populations, such as those involved in clinical settings. The use of a lower cut-off score is supported by other studies that used a cut-off score of 12 (Kazdin, Colbus, & Rodgers, 1986) or 13 (Garvin, Leber, & Kalter, 1991) with samples in which a higher incidence of depression was expected. Kovacs recommended setting cut-off scores based on whether the researcher or clinician was more interested in minimizing false negatives or false positives.

Studies on the CDI have demonstrated internal consistency reliability coefficients from the mid- to upper-.80s (Nelson, Politano, Finch, Wendel, & Mayhall, 1987) to .94 (Saylor, Finch, Spirito, & Bennett, 1984). Test-retest reliability coefficients have been somewhat lower, ranging from .38 to .87 (Saylor et al., 1984), depending on the interval between testings and the population sampled. Based on these and other research studies, the validity of the CDI has been well established (see Kovacs, 1992).

During follow-up assessment, all participants in the treatment groups completed a four-item questionnaire consisting of the following items: (1) Did you

like the learned optimism program? (2) Do you feel the learned optimism program helped you feel more happy? (3) Name one thing you liked about the learned optimism program. (4) Name one thing you didn't like about the learned optimism program (see Appendix D).

Procedure

Before the learned optimism program began, all sixth grade teachers attended a six-hour training program on the curriculum of the learned optimism program. This training program was both didactic and interactive in nature. It was administered by staff from the community counseling agency that developed and implemented the learned optimism program in the school setting.

All four groups (treatment, attention-placebo, delayed-treatment, and control) completed the CDI on three occasions: before the learned optimism program began (pretest), immediately after the first eight-week program was terminated (posttest), and eight weeks later (after the second eight-week program was terminated). Participants were assessed in their classrooms. They were assured that they were not taking a test and that there were no right or wrong answers to the questions. They were also assured of the confidentiality of their responses. All administrations of the CDI were conducted by the researcher.

The CDI assesses depressive symptoms only for the past two weeks. Therefore, during follow-up testing (posttesting of the delayed treatment group), the participants were instructed to identify the period during the past two weeks when

they were feeling the worst ("feeling more sad than usual") and to base their answers on that time period.

Learned Optimism Program

The learned optimism program is an eight-week, curriculum-based program designed to assist adolescents in developing a more optimistic self-explanatory style that contributes to resiliency and positive mental health. The premise is that individuals can be taught more optimistic self-talk in response to life's setbacks and difficulties. The program combines in-session instruction with weekly homework assignments that target how individuals think, feel, and react when faced with problems.

Participants in the treatment and delayed-treatment groups were divided into groups of 10 and met once a week for one class period (50 minutes). The classroom teachers divided their own classes into groups of 10 to ensure heterogeneous groups. Staff from a local mental health community agency and staff from the middle school served as co-facilitators for the learned optimism groups. The specific curriculum, on a week-by-week account, is provided in Appendix E.

The researcher met with the attention-placebo group in their classroom once a week for one class period. The researcher presented various scenarios involving ethical social dilemmas adolescents encounter, and then facilitated a group discussion of possible solutions to the problems presented. This was an open-ended discussion, and no problem-solving techniques or strategies were taught. This group

participated in a learned optimism treatment program during the second eight-week period of the study.

The control group followed their regular class curriculum. They did not participate in a learned optimism or attention-placebo program.

At the end of the second eight-week period, the treatment group completed a follow-up assessment with the CDI. This was conducted to measure the maintenance effects of the learned optimism program.

Results of this study were made available to participants, parents, teachers, and administrative staff on request. These results served to debrief all participants regarding the nature and the outcome of the study.

CHAPTER 4

RESULTS

Data were analyzed utilizing analyses of variance (ANOVA), split-plot analyses of variance (SPANOVA), and analyses of covariance (ANCOVA) statistical procedures (see, for example, Shavelson, 1996). The Bonferroni Modified LSD test was also used for analyzing all post-hoc comparisons. Two sets of scores were analyzed: (1) CDI total score for each participant at each of the three assessment phases and (2) CDI subscale scores for each participant at each of the three assessment phases (see Appendices F, G, and H). An analysis of high-scoring subjects, that is, those participants who obtained a CDI total score of 13 or above (Kovacs, 1992; Seligman, 1995), could not be conducted because of the small number of subjects in some groups who obtained "high scores." To assess the correlation of each participant's score for each item on the CDI with their respective total CDI score, alpha reliability coefficients (Cronbach, 1951) were computed for all participants across each of the three assessment phases. Finally, participants' responses to a two-item questionnaire were tallied to determine learned optimism group participants' level of subjective satisfaction with the program.

Hypothesis 1

The means and standard deviations of the CDI total scores at Pretest and Posttest 1 for the four groups are presented in Table 1. Consistent with a similar

Table 1

Means and Standard Deviations of CDI Total Scores for the Treatment Group, Attention-Placebo Group, Delayed Treatment Group, and Control Group at Pretest, Posttest 1, and Posttest 2

Group	Time								
	Pretest			Posttest 1			Posttest 2		
	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>
Treatment	85	9.74	8.22	85	9.88	9.19	79	9.94	10.01
Attention- Placebo	23	11.37	8.61	23	9.20	8.68	19	7.46	7.74
Delayed Treatment	56	7.25	7.40	56	7.55	7.87	53	5.92	6.39
No Treatment Control	26	8.19	6.57	26	5.92	5.23	22	8.00	10.00

study by Kahn et al. (1990), an ANOVA for CDI total scores for the four groups at Pretest was calculated initially to determine whether there were any significant differences ($p > .05$) among the four groups. The results of this analysis indicated that there were no significant differences among the groups, $F(3,196) = 2.10$, $p > .05$.

The means and standard deviations of the five CDI subscale scores for participants in each of the four experimental groups at Pretest and Posttest 1 are presented in Table 2. ANOVA's for subscale scores for the four groups at Pretest were calculated to determine whether there were any significant differences on the five subscales among the four groups. On the Negative Mood Scale, the results indicated that there were no significant differences among the groups, $F(3,200) = .55$, $p > .05$. On the Interpersonal Problems Scale, there were no significant differences among the groups, $F(3,198) = 2.05$, $p > .05$. On the Ineffectiveness Scale, there were no significant differences among the groups, $F(3,198) = 2.33$, $p > .05$. In addition, there were no significant differences among the groups on the Anhedonia Scale, $F(3,197) = 2.07$, $p > .05$ or on the Negative Self-Esteem Scale, $F(3,198) = 2.12$, $p > .05$.

Results of an ANCOVA (using the Pretest as the covariate) for CDI total scores across the four experimental groups, as measured immediately following the first learned optimism treatment series (Posttest 1), demonstrated no significant differences among the four groups, $F(3,185) = 2.50$, $p > .05$. The results of this analysis suggest that the number of reported depressive symptoms in the treatment

Table 2

Means and Standard Deviations of CDI Subscales for the Treatment Group, Attention-Placebo Group, Delayed Treatment Group, and Control Group at Pretest, Posttest 1, and Posttest 2

<u>Subscale</u>	<u>Time</u>	<u>Group</u>											
		<u>Treatment</u>			<u>Attention-Placebo</u>			<u>Delayed Treatment</u>			<u>Control</u>		
		<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>
Negative	Pretest	85	3.81	1.62	27	3.96	1.85	58	3.53	1.55	31	3.68	1.54
Mood	Posttest 1	85	3.71	1.77	27	3.60	2.14	58	3.31	1.53	31	3.44	1.74
	Posttest 2	83	3.75	1.96	26	3.23	1.66	51	3.14	1.34	31	3.47	1.92
Interpersonal	Pretest	83	.92	1.30	27	.96	1.29	58	.69	1.14	31	.35	.66
Problems	Posttest 1	83	.81	1.22	27	.64	1.07	58	.73	1.36	31	.58	.94
	Posttest 2	83	.92	1.42	26	.69	1.05	51	.69	1.16	31	.94	1.63

Table 2--continued

<u>Subscale</u>	<u>Time</u>	<u>Group</u>											
		<u>Treatment</u>			<u>Attention-Placebo</u>			<u>Delayed Treatment</u>			<u>Control</u>		
		<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>
Ineffectiveness	Pretest	83	1.86	2.01	27	1.78	1.87	58	1.12	1.26	30	1.40	1.43
	Posttest 1	83	2.18	2.03	27	1.48	1.78	58	1.22	1.77	30	1.13	1.51
	Posttest 2	83	2.15	2.23	26	1.54	1.94	51	1.00	1.56	30	1.56	1.95
Anhedonia	Pretest	83	3.40	2.91	27	3.96	2.68	58	2.45	2.94	30	3.23	2.82
	Posttest 1	83	2.99	2.83	27	3.08	2.56	58	2.65	2.87	30	2.21	2.13
	Posttest 2	83	2.18	2.52	26	2.38	2.26	50	2.04	2.16	30	1.37	2.11
Negative	Pretest	83	1.73	1.99	27	2.04	2.23	58	1.12	1.51	30	1.30	1.53
Self-Esteem	Posttest 1	83	1.73	2.13	27	1.92	2.10	58	1.11	1.48	30	1.37	1.47
	Posttest 2	83	2.18	2.52	26	1.38	1.60	51	.78	1.12	30	1.37	2.11

group was not significantly different from that reported by the attention-placebo group, the delayed treatment control group, or the no treatment control group following participation in the first learned optimism program.

ANCOVAs for each of the five CDI subscales were also computed across the four experimental conditions at Posttest 1. For the Negative Mood Scale, the results indicated that there were no significant differences among the groups, $F(3,192) = .90, p > .05$. On the Interpersonal Problems Scale, there were no significant differences between the groups, $F(3,190) = .44, p > .05$. On the Ineffectiveness Scale, there was a significant difference among the four experimental groups, $F(3,190) = 5.61, p < .05$. The Bonferroni test showed that there was a significant difference between the treatment and delayed treatment group, with the treatment group's mean being significantly higher than the mean of the delayed treatment group. On the Anhedonia Scale, there were no significant differences among the groups, $F(3,188) = 1.29, p > .05$. There were also no significant differences found among the four groups on the Negative Self-Esteem Scale, $F(3,189) = 2.37, p > .05$.

Hypothesis 2

A split-plot ANOVA was computed to determine whether a significant difference existed between Pretest and Posttest 1 total scores within any of the four groups. Results indicated no significant differences within any of the four groups, $F(6,338) = .93, p > .05$. This suggests that there were no significant differences within any of the four groups following the first learned optimism program.

Split-plot ANOVAs for each of the five CDI subscales were computed for the four groups. For the Negative Mood Scale, the results showed no significant differences within any of the four groups, $F(6,364) = .43, p > .05$. On the Interpersonal Problems Scale, the results indicated that there were no significant differences, $F(6,358) = 1.28, p > .05$. No significant differences were found on the Ineffectiveness Scale, $F(6,362) = .81, p > .05$. On the Anhedonia Scale, the results indicated no significant differences, $F(6,350) = 1.07, p > .05$. On the Negative Self-Esteem Scale, the results showed no significant differences, $F(6,354) = 1.01, p > .05$.

Hypothesis 3

The means and standard deviations of the CDI total scores for all four groups immediately following their participation in the learned optimism treatment program (Posttest 1 for the treatment and control group and Posttest 2 for the attention-placebo group and delayed treatment group) are presented in Table 3. An ANCOVA for CDI total scores for the four groups as measured immediately following participation in the learned optimism treatment program demonstrated a significant difference among the four groups, $F(3,178) = 2.86, p < .05$. Post hoc comparisons revealed that the treatment group was significantly higher than the delayed treatment group.

The means and standard deviations of the five subscales for each of the four groups following participation in the treatment program are presented in Table 4. ANCOVAs for each of the five CDI subscales were computed across the four

Table 3

Means and Standard Deviations of CDI Total Scores for the Treatment Group and Control Group at Posttest 1 and for the Attention-Placebo Group and Delayed Treatment Group at Posttest 2

<u>Group</u>	<u>Posttest 1</u>		
	<u>N</u>	<u>M</u>	<u>S.D.</u>
Treatment	85	9.88	9.19
Control	26	5.92	5.23
<u>Group</u>	<u>Posttest 2</u>		
	<u>N</u>	<u>M</u>	<u>S.D.</u>
Attention-Placebo	19	7.46	7.74
Delayed Treatment	53	5.92	6.39

Table 4

Means and Standard Deviations of CDI Subscales for the Treatment Group and Control Group at Posttest 1 and for the Attention-Placebo Group and Delayed Treatment Group at Posttest 2

<u>Subscale</u>	<u>Posttest 1</u>						<u>Posttest 2</u>					
	<u>Treatment</u>			<u>Control</u>			<u>Attention-Placebo</u>			<u>Delayed Treatment</u>		
	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>N</u>	<u>M</u>	<u>S.D.</u>
Negative												
Mood	85	3.71	1.77	31	3.44	1.74	26	3.23	1.66	51	3.14	1.34
Inter-												
personal												
Problems	83	.81	1.22	31	.58	.94	26	.69	1.05	51	.69	1.16
Ineffec-												
tiveness	83	2.18	2.03	30	1.13	1.51	26	1.54	1.94	51	1.00	1.56
Anhedonia	83	2.99	2.83	30	2.21	2.13	26	2.38	2.26	50	2.04	2.16
Negative												
Self-												
Esteem	83	1.73	2.13	30	1.37	1.47	26	1.38	1.60	51	.78	1.12

groups following participation in the treatment series. For the Negative Mood Scale, the results showed that there were no significant differences among the groups, $F(3,186) = 1.59, p > .05$. On the Interpersonal Problems Scale, there were no significant differences among the groups, $F(3,184) = .24, p > .05$. On the Ineffectiveness Scale, a significant difference was found between the treatment group and the delayed treatment group, $F(3,184) = 5.47, p < .05$, with post hoc comparisons showing that the treatment group was significantly higher than the delayed treatment group. On the Anhedonia Scale, there were no significant differences among the groups, $F(3,181) = 2.37, p > .05$. A significant difference was found on the Negative Self-Esteem Scale between the treatment group and the delayed treatment group, $F(3,183) = 3.39, p < .05$. Post hoc comparisons revealed that the treatment group was significantly higher than the delayed treatment group.

Hypothesis 4

The means and standard deviations for the attention-placebo group and the delayed treatment group at Posttest 1 and Posttest 2 are presented in Table 1. The split-plot ANOVA showed no significant differences in CDI total scores between Posttest 1 and Posttest 2 for the attention-placebo and the delayed treatment groups after their participation in the learned optimism treatment program, $F(6,338) = .93, p > .05$.

The means and standard deviations of the five subscales for the attention-placebo group and the delayed treatment group, across time, are presented in Table 2. The split-plot ANOVA for the Negative Mood Scale, showed no significant

differences within either group, $F(6,364) = .43, p > .05$. On the Interpersonal Problems Scale, there were no significant differences within either group, $F(6,358) = 1.28, p > .05$. No significant differences were found on the Ineffectiveness Scale for either group, $F(6,362) = .81, p > .05$, and on the Anhedonia Scale, no significant differences were found for either group, $F(6,350) = 1.07, p > .05$. In addition, no significant differences were found on the Negative Self-Esteem Scale for either group, $F(6,354) = 1.01, p > .05$.

Hypothesis 5

The means and standard deviations of the treatment group and the control group at the eight-week follow-up are presented in Table 1. The split-plot ANOVA showed that there were no significant differences between the treatment group and the control group on CDI total scores eight weeks following participation in the learned optimism program, $F(6,338) = .93, p > .05$.

The means and standard deviations of the five subscales for the treatment and control groups at the eight-week follow-up are presented in Table 2. The split-plot ANOVA revealed no significant differences between the two groups on the Negative Mood Scale, $F(6,364) = .43, p > .05$, the Interpersonal Problems Scale, $F(6,358) = 1.28, p > .05$, the Ineffectiveness Scale, $F(6,362) = .81, p > .05$, the Anhedonia Scale, $F(6,350) = 1.07, p > .05$, or the Negative Self-Esteem Scale, $F(6,354) = .416, p > .05$.

Hypothesis 6

The means and standard deviations of the treatment group and the control group at Pretest, Posttest 1, and at the eight-week follow-up are presented in Table 1. The split-plot ANOVA showed that there were no significant differences on CDI total scores in either the treatment or the control groups across time, $F(6,338) = .93$, $p > .05$.

The means and standard deviations of the five subscales for the treatment and control groups across time are presented in Table 2. The split-plot ANOVA showed that there were no significant differences in either the treatment group or the control group across time on the Negative Mood Scale, $F(6,364) = .43$, $p > .05$, the Interpersonal Problems Scale, $F(6,358) = 1.28$, $p > .05$, the Ineffectiveness Scale, $F(6,362) = .81$, $p > .05$, the Anhedonia Scale, $F(6,350) = 1.07$, $p > .05$, or the Negative Self-Esteem Scale, $F(6,354) = 1.01$, $p > .05$.

Reliability analyses using Cronbach's (1951) alpha coefficient resulted in the following alpha reliability coefficients: treatment group alpha = .91, attention-placebo group alpha = .89, delayed treatment group alpha = .87, and control group alpha = .89. Alpha coefficients for the combined scores of all four groups across time were as follows: Pretest alpha = .87, Posttest 1 alpha = .89, and Posttest 2 alpha = .92. All obtained alpha coefficients are considered to be an indication of good internal consistency reliability for this population sample.

At Posttest 2, the treatment group, the attention-placebo group, and the delayed treatment group completed a questionnaire by responding to the following

four questions: (1) Did you like the learned optimism program? (2) Do you feel the learned optimism program helped you feel more happy? (3) Name one thing you liked about the learned optimism program. (4) Name one thing you didn't like about the learned optimism program. All three treatment groups' responses were combined for computation ($N = 147$). In response to the first question, 96% of all subjects who participated in the learned optimism treatment program responded "Yes," indicating that they liked the optimism program. In response to the second question, 74% answered "Yes;" they felt that the learned optimism program helped make them feel more happy. Since the answers to questions #3 and #4 were not quantifiable, analyses of participants' responses to these latter questions were not conducted.

CHAPTER 5

DISCUSSION

This chapter discusses the results of the present study in relation to the literature on school-based, cognitive-behavioral interventions for childhood and adolescent depression. In addition, the limitations of the study and recommendations for future research are discussed.

The purpose of this study was to determine whether depressive symptoms in adolescents decreased significantly as a result of participation in a school-based, cognitive-behavioral intervention program called learned optimism. This program was derived from Seligman's reformulated learned helplessness theory (Abramson et al., 1978) which postulated that depressed individuals hold a pessimistic explanatory style that is a contributing causative factor for depressive symptoms (Gillham et al., 1995; Seligman, 1990).

With regard to the first hypothesis, no significant differences were found on CDI total scores among the learned optimism treatment group, the attention-placebo group, the delayed treatment group, and the no treatment control group at Posttest 1, immediately following the termination of the first learned optimism treatment program. This suggests that participation in the learned optimism treatment program did not significantly reduce the depressive symptoms of participants relative to those children in the experimental control conditions. This finding is inconsistent with

those of Gillham et al. (1995) who investigated the effects of a learned optimism program on children at-risk for depression. Specifically, they found that those children who participated in a learned optimism treatment program reported significantly fewer depressive symptoms than the children in a control group. In this particular study, the researchers created a single selection criterion of initial risk by combining scores on two dependent measures, converting them to z scores, and summing them. Those children who obtained a distress score of .50 or higher were included in the study.

When CDI subscales were analyzed to determine whether there were significant differences among the four groups immediately following the termination of the first learned optimism treatment program, the results also showed that participation in this treatment program produced no significant changes on the Negative Mood, Interpersonal Problems, Anhedonia, or Negative Self-Esteem subscales of participants. A significant difference, however, was found between the learned optimism treatment group and the delayed treatment group on the Ineffectiveness subscale, but not between any other treatment conditions. The relevance of this finding is difficult to interpret because no significant differences were found between the learned optimism group and any of the other experimental control groups. One possible explanation, however, may be that this finding is a result of the experimental design. Specifically, a quasi-experimental design was used because participants were not randomly assigned to the experimental conditions; therefore, it is possible that the significant difference found on the Ineffectiveness

Scale at Posttest 1 was due to preexisting group differences rather than any treatment effect (see Campbell & Stanley, 1963). Although it could be argued that the utilization of an analysis of covariance would have helped reduce the effects of initial group differences, it is still an imperfect statistical technique for equating experimental groups prior to the introduction of the independent variable (Borg & Gall, 1983).

With regard to Hypothesis 2, no significant differences were found on CDI total scores between Pretest and Posttest 1 for the participants in the treatment group, the attention-placebo group, the delayed treatment group, and the no treatment control group. Although these results were expected for the attention-placebo, delayed treatment, and no treatment control groups, they were not expected for the learned optimism treatment group. In addition, no significant differences were found among any of the treatment and experimental control conditions on any of the subscale measures between Pretest and Posttest 1. This finding is also inconsistent with Gillham et al. (1995) and Seligman (1990) who suggested that learned optimism training is an effective method for reducing depressive symptoms in middle school children.

With regard to Hypothesis 3, a significant difference was found on CDI total scores among the treatment group, the attention-placebo group, the delayed treatment group, and the no treatment control group following the participation of each of the three groups in the learned optimism treatment program (i.e., Posttest 1 for the treatment group and control group; Posttest 2 for the attention-placebo group and the

delayed treatment group). Specifically, the post hoc analysis showed that the treatment group reported significantly more depressive symptoms on the CDI than the other three groups. This unexpected finding may have occurred as a result of the time of year in which the treatment group participated in the learned optimism program--that is, immediately following winter vacation. One might speculate that this is a time of year when pressure is placed on school-aged children to resume studying and become more serious about doing well in school, thereby possibly increasing depressive symptoms in some of the children in the group. The attention-placebo and delayed treatment groups' participation occurred during the spring, at a time when children may be less serious about school as they anticipate summer vacation, thereby resulting in less reporting of depressive thoughts and feelings.

When CDI subscales were analyzed following the participation of the three groups in the learned optimism program, a significant difference was found on the Ineffectiveness and Negative Self-Esteem subscales between the treatment group and the delayed treatment group. Again, these results may have occurred because of the different time periods in the school year when the treatment programs were initiated. Specific CDI items on the Ineffectiveness Scale relate primarily to school performance. The items on the Negative Self-Esteem subscale relate to an individual's satisfaction with his or her self. At the time the treatment program began, the self-esteem of the participants may have been negatively impacted by the perception of ineffectiveness at school, which may have been induced by the increased pressure to perform well.

With regard to Hypothesis 4, when CDI total scores were analyzed between Posttest 1 and Posttest 2 for the attention-placebo and delayed treatment groups, no significant differences were found. This suggests that although the attention-placebo group received informal problem-solving sessions in addition to participating in the learned optimism program, their reported depressive symptoms remained relatively unchanged. Reported depressive symptoms of the delayed treatment group also remained unchanged following their participation in the learned optimism program.

When CDI subscales were analyzed to determine whether significant differences existed within the attention-placebo and delayed treatment groups following their participation in the learned optimism program, no significant differences were found. Specifically, symptoms related to negative mood, interpersonal problems, ineffectiveness, anhedonia, and negative self-esteem remained relatively unchanged.

For Hypotheses 5 and 6, the results were analyzed to determine whether there was a significant difference on CDI total scores between the learned optimism treatment and no treatment control groups at Pretest, Posttest 1, and at the eight-week follow-up. The results showed that participating in the learned optimism program made no significant difference in CDI total scores between these two groups or within these two groups at any point in time. Participation in the learned optimism treatment program did not effect a significant difference either immediately following termination of the program or at follow-up. In addition, no significant differences were found at either Posttest 1 or at follow-up on the CDI

subscale analyses between and within the treatment and no treatment control groups. This finding is, again, inconsistent with those reported by Gillham et al. (1995) who found significant long-term maintenance effects of a learned optimism treatment program for children at-risk for depression.

The results are also inconsistent with those of other research studies utilizing school-based, cognitive-behavioral treatment programs for depressed children. For example, Butler et al. (1980) found that fifth and sixth grade students who reported significantly high depressive symptoms on an assessment battery showed significant improvement following participation in a cognitive restructuring treatment program. Similarly, Reynolds and Coats (1986) reported that in a population of high school students reporting depressive symptoms, the group that received cognitive-behavioral therapy showed a significant improvement over the control group. Similar results were reported by Kahn et al. (1990) with a group of moderately depressed sixth, seventh, and eighth grade students. Stark, Reynolds, and Kaslow (1987) also found significant improvement in reported depressive symptoms in a sample of moderately depressed fourth, fifth, and sixth graders who participated in either a self-control treatment group or a behavioral problem-solving treatment group. Although there was also a significant difference between these two groups over a no treatment control group, there was no significant difference between the two treatment groups.

An important difference between the above studies and the present study was that the content of the latter treatment programs focused primarily on ameliorating specific depressive symptoms. In contrast, the content of the present study was not

tailored specifically to the behavioral characteristics of clinical depression; rather, consistent with Seligman (1990), the program focused on disputation of negative thinking--only one component of most cognitive-behavioral treatment programs for depression. It is also important to make note of an additional methodological difference between the present study and those cited above. Specifically, the participants used in the above studies were each identified as being at least moderately depressed as determined by an assessment battery whereas the participants in the present study were a more heterogenous group consisting of students with varying levels of depression scores. This occurred because of the nature of the quasi-experimental design--where participants were chosen based on their grade level and class schedule. In addition, the present study utilized a treatment program that was oriented toward preventing the occurrence or increased severity of depressive symptoms in middle school children rather than the treatment of only children identified as depressed.

When comparing the present results to those of Gillham et al. (1995), there are also some important methodological differences. First, because all students from each classroom were used in the present study, many students who were not at-risk for depression were included. In the study by Gillham et al., only children assessed as at-risk for depression participated. Second, in the Gillham et al. study a social problem-solving component was included in treatment. Thirdly, several assessment instruments were used, including a specific measure of explanatory style, whereas the present study used only the CDI.

Although the present study did not result in statistically significant differences in reported depressive symptoms of children participating in the learned optimism treatment program, it was demonstrated that internal consistency reliability was high when alpha reliability coefficients were computed. Furthermore, responses on an informal questionnaire demonstrated that the learned optimism program was perceived positively by most participants. A total of 147 children who participated in the learned optimism treatment program completed this questionnaire. One hundred forty-one (96%) responded that they "liked" the learned optimism program, and 109 (74%) indicated that they felt that the learned optimism program made them "feel more happy." Unfortunately, these rating data did not correspond with the results of the analyses using the CDI data.

Limitations of the Study

The primary limitation of the present study was the assessment instrument used to measure the effects of the learned optimism program. Although the content of the treatment program purported to target depressive symptomology in adolescents, the content did not appear to be specifically related to the content covered on the CDI. For example, the statements on the CDI relate very specifically to the characteristics of clinical depression. The content of the learned optimism program, however, focused on only one aspect of clinical depression, namely, negative thinking.

A second limitation involved the fact that only one assessment instrument was used to measure the outcome of the learned optimism program. Only the CDI

was used because it is considered the most reliable assessment measure for depression (Saylor et al., 1984) and has been the most widely used in research studies (see Kazdin & Petti, 1982; Kovacs, 1992).

A third limitation is related to the small number of depressed participants in each treatment condition--depression characterized by a cut-off score of 13 and above on the CDI (see Kovacs, 1992). Due to the limited number of clinically depressed participants, it was not possible to conduct a statistically valid analysis of only clinically depressed participants, and therefore, the CDI scores of all participants were included in the data analysis. This addition of nonclinically depressed participants (i.e., having scores below 13 on the CDI) may have skewed the data, making it difficult to obtain significant results.

Future Research

A limited number of studies have investigated school-based treatment programs for children at-risk for depression. Research is needed to determine the most beneficial and cost-effective method for identifying and assessing these children, as well as developing reliable intervention programs for them. It would also be advantageous to determine which children are likely to benefit from cognitive-behavioral treatment and which would be resistant. In addition, it would be beneficial to study the impact of including the family in school-based studies to enhance generalization of the treatment techniques to the participants' home environment.

APPENDIX A

HUMAN SUBJECTS APPROVAL

The University of
Arizona
Health Sciences Center

Human Subjects Committee

1622 E. Mabel St.
Tucson, Arizona 85724
(602) 626-6721

28 September 1995

Lois Bursuk, M.Ed.
c/o Richard Morris, Ph.D.
Department of Educational Psychology
Main Campus

**RE: HSC A95.118 A SCHOOL-BASED COGNITIVE BEHAVIORAL
INTERVENTION APPROACH FOR SIXTH GRADE STUDENTS WITH
SYMPTOMS OF DEPRESSION**

Dear Ms. Bursuk:

We received your revised parental and minor assent forms for the above cited research proposal. The procedures to be followed in this study pose no more than minimal risk to participating subjects. Regulations issued by the U.S. Department of Health and Human Services [45 CFR Part 46.110(b)] authorize approval of this type project through the expedited review procedures, with the condition(s) that subjects' anonymity be maintained. Although full Committee review is not required, a brief summary of the project procedures is submitted to the Committee for their endorsement and/or comment, if any, after administrative approval is granted. This project is approved effective 28 September 1995 for a period of one year.

The Human Subjects Committee (Institutional Review Board) of the University of Arizona has a current assurance of compliance, number M-1233, which is on file with the Department of Health and Human Services and covers this activity.

Approval is granted with the understanding that no further changes or additions will be made either to the procedures followed or to the consent form(s) used (copies of which we have on file) without the knowledge and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

A university policy requires that all signed subject consent forms be kept in a permanent file in an area designated for that purpose by the Department Head or comparable authority. This will assure their accessibility in the event that university officials require the information and the principal investigator is unavailable for some reason.

Sincerely yours,

William F Denny, M.D.
Chairman, Human Subjects Committee

WFD:rs
cc: Departmental/College Review Committee

APPENDIX B

PARENT PERMISSION LETTER

PARENT PERMISSION/SUBJECT'S CONSENT
FOR EDUCATIONAL RESEARCH

YOU ARE BEING ASKED TO READ THE FOLLOWING MATERIAL TO ENSURE THAT YOU ARE INFORMED OF THE NATURE OF THE STUDY AND OF HOW YOUR CHILD WILL PARTICIPATE IN IT, IF YOU CONSENT TO DO SO. SIGNING THIS FORM WILL INDICATE THAT YOU HAVE BEEN SO INFORMED AND THAT YOU GIVE YOUR CONSENT. FEDERAL REGULATIONS REQUIRE WRITTEN INFORMED CONSENT PRIOR TO PARTICIPATION IN THIS RESEARCH STUDY SO THAT YOU KNOW THE NATURE AND THE RISKS OF YOUR CHILD'S PARTICIPATION AND CAN DECIDE TO HAVE HIM/HER PARTICIPATE OR NOT TO PARTICIPATE IN A FREE AND INFORMED MANNER.

Dear Parents:

This year we are fortunate to have staff from Our Town Family Center work with the sixth grade students in a program called Learned Optimism. The expected benefits of this program for the students are the following: Developing a strong sense of feeling worthwhile, valuable, and unique; experiencing control over their lives through the choices they learn to make; developing the ability to identify, express, and accept their feelings, becoming aware of their self-talk and its effects; and developing communication skills that build strong, supportive relationships. No negative effects or risks from participating in this program are anticipated.

The sixth grade population of students has been chosen as participants due to their developmental stage and level of cognitive maturity. However, due to scheduling constraints, some sixth grade students will not be participating in the Learned Optimism program. If your son/daughter is chosen to participate, s/he will be involved in a small group of 10 students who will meet once a week for eight weeks (your child's whole class will also be participating so your child will not be missing any class lessons). At the beginning, the middle, and the end of the program your son/daughter will be asked to respond to a questionnaire regarding how they feel about themselves and others. This questionnaire does not ask any family related questions. The questionnaire will be administered by me and no one else will see it once it is completed. Students' names will not be public information and will be kept confidential. The statistical data obtained from the questionnaire will be used to determine if the Learned Optimism program makes a significant difference in the way students think about themselves. In addition, I may be using the data as part of my dissertation research for a Ph.D. degree at the University of Arizona.

This study has been approved by the school district and the school. The results obtained from this program will be available to any parent who requests it. You are free to withdraw your child from this program at any time and for any reason. You are also free to ask questions at any time. You can reach me at 690-2228. If you agree to have your child participate in this program and research study, please sign and return the statement below.

"Before giving my consent by signing this form, the methods, inconveniences, risks, and benefits have been explained to me and my questions have been answered. I understand that I may ask questions at any time and that I am free to withdraw my child from the project at any time without causing bad feelings. Participation in this project may be ended by the investigator or by the sponsor for reasons that would be explained. New information developed during the course of this study which may affect my willingness to have my child continue in this research project will be given to me as it becomes available. I understand that this consent form will be filed in an area designated by the Human Subjects Committee with access restricted to the principal investigator, Lois Bursuk, or authorized representative of the Educational Psychology Department. I understand that I do not give up any of my legal rights by signing this form. A copy of this signed consent form will be given to me.

Parent or Legal Guardian Signature

Date

I have carefully explained to the parent/legal guardian of the subject the nature of the above project. I hereby certify that to the best of my knowledge the person who is signing this consent form understands clearly the nature, demands, benefits, and risks involved in his/her participation and his/her signature is legally valid. A medical problem or language or educational barrier has not precluded this understanding.

Signature of Investigator

Date

APPENDIX C
ASSENT FORM

ASSENT FORM FOR PROJECT INVOLVING MINORS
Learned Optimism Program

Your mother/father/guardian has told me that it is alright for you to complete this questionnaire and participate in the Learned Optimism program. You will be completing this questionnaire three times over the course of this school year. The purpose of the questionnaire is to see how people your age think and feel about certain things, and how their thinking and feelings may change as a result of participating in the Learned Optimism group. No one will see your responses to the questionnaire except for me. Your questionnaires will be stored in a locked file cabinet so no one else will see them. Do you understand? Is this OK?

Subject's Name and Signature

Date

Investigator's Signature

Date

APPENDIX D

LEARNED OPTIMISM QUESTIONNAIRE

Learned Optimism Questionnaire

1. Did you like the Learned Optimism Program?
Circle one: YES NO
 2. Do you feel the Learned Optimism Program helped you feel more happy?
Circle one: YES NO
 3. Name one thing you liked about the Learned Optimism Program.
 4. Name one thing you didn't like about the Learned Optimism Program.
-

APPENDIX E

LEARNED OPTIMISM CURRICULUM

Learned Optimism Curriculum

Week 1

Focus: Establishing a safe environment
 Expectations and ground rules
 Getting to know each other

Materials: Keys to the Kingdom, name tags, markers, newsprint,
 tape, bingo sheets

1. Introduction

Facilitator introduces self and describes the group:

- time to meet
- eight sessions plus all day retreat
- Keys to the Kingdom (What is meant by kingdom?)
- place to be able to talk about important things going on in their lives
- What are you thinking about being here now? What kind of time are you having? Your thoughts probably match the kind of time you're having.

2. Name Tags

After a few minutes to draw and decorate name tags, have a quick round of "I am _____ and my favorite animal is _____."

3. Bingo Game

The object is for each person to have other group members write their names in any boxes that fit them (no more than two signatures of the same person per page). Process by bringing out commonalities, e.g., "Stand up if you have three or more pets."

4. Group Ground Rules or The Constitution

- a) Ask the group: What can people do in the group to make it safe for you to talk about important things in your life? What can they do to make it unsafe?
- b) (On newsprint) What rights as a group member do you feel need to be agreed upon to make this a safe environment for you? (Be sure

they include no putdowns, no interrupting, no laughing at others. confidentiality, right to pass, right to check out)

- c) What do you think should happen if the constitution is not followed? (List under the constitution). "Since we've all agreed upon the constitution, whose choice is it to keep or disregard the rules?"
- d) Emphasize that participation in the group is voluntary. Anyone can choose to go back to the room if they don't want to follow the constitution. If anyone is asked to leave they can choose to return when they are ready.
- e) Have all sign the constitution, signifying agreement.

5. Closing

Round of: I am _____ and one thing I'm good at is _____." OR I am _____ and I feel _____ about this group.

Notes:

Phrases that support the curriculum and deal with acting out behavior:

- * Are you giving or taking away from the group?
- * Is what you're doing helpful or hurtful to the group?
- * What do your need/want? Supply choices: Do you need time with me? Time by yourself? The group's time? Would it be helpful for me to sit next to you?
- * What are you telling yourself right now? Supply choices the first few weeks.
- * Notice what you're telling yourself.
- * Who would you like to be in control of your group? You or me?

Week 2

Focus: Identifying, labeling and accepting feelings

Materials: Keys to the Kingdom and ground rules, newsprint, markers, tape, name tags, Feelings cards, Identifying Feelings sheet

1. Opening

- a) Facilitator and group review Keys and the constitution.

- b) Round - "I am _____ and one thing people like about me is _____.
 Ask group to give themselves permission to say good things about themselves. If having trouble coming up with something ask, "What are you saying to yourself right now? Do you need help from us?"
- c) "Does anyone have anything going on in their life now that they would like to talk about?"

2. Brainstorm Feelings

- a) On newsprint have students brainstorm a list of all the feeling/emotions words they can think of.
- b) To get them to connect with the list more personally, ask each student to pick one of the words from the list and tell about a time they felt that feeling.
- c) Discussion around feelings. Points/Questions to include:
- * Which of these feelings are good? Which are bad?
 - * All feelings are okay to have. They are not good or bad, they just are. However, it may feel comfortable or uncomfortable to have certain feelings.
 - * Why do we need feelings?
 - * Feelings give us information about situations - whether something is okay or not for us. If we're angry then that tells us something is not okay with us. There are reasons we feel the way we do.
 - * Which feelings have you been told not to feel?
 - * Usually we are told not to feel certain feelings because others are uncomfortable with those feelings.
 - * What happens when we stuff our feelings?

3. Feelings Cards (Optional)

Tell students that they will play a game like Charades.

Volunteers will get Feelings Card from you which they will act out for the rest of the group. They keep acting it out until a member of the group guesses the feeling.

(Feeling Cards: Angry, Sad, Embarrassed, Confused, Afraid, Bored, Excited, Worried, Annoyed, Frustrated)

4. Identifying Feelings

- a) Pass out Identifying Feelings sheets and have them write down how they would feel in each circumstance (not how they like to feel or ought to feel).
- b) Have volunteers read their answers to each item. Ask which is the "right" feeling to have in that situation. Emphasize that any feeling is the right one for that person.

(You may want to discuss the difference between, "I feel . . ." and "He made me feel . . ." which implies that someone else has the power to make someone feel a certain way.)

5) Closing

Round - "I am _____ and right now I feel _____."

Note:

If someone in the group has shared something particularly personal, ask them what happened in the group that allowed them to share that openly. This can reinforce the value of communicating with each other in supportive ways.

FEELINGS

1. When I'm with my friends and they want me to do something I don't want to do, I feel _____.
2. When I get exactly what I asked for my birthday or Christmas, I feel _____.
3. When I have a bad week - when everything goes wrong, I feel _____.
4. When someone (parent, best friend) tells me they love me, I feel _____.
5. When I really want to do something and my mom or dad says I can't, I feel _____.

6. When my parents take my brother's/sister's side in an argument, I feel _____.
7. When I get a good grade on a test, I feel _____.
8. When someone tells lies about me and my friends believe them, I feel _____.
9. When my parents argue, I feel _____.
10. When my mom just listens to me (doesn't lecture, explain or try to fix it), I feel _____.
11. When I order pepperoni pizza and receive the "vegetarian delight", I feel _____.
12. When I have a fight with my best friend, I feel _____.
13. When I'm in a situation (recess, new school or party) and I don't know anyone and no one comes to talk to me, I feel _____.
14. When someone tells me I've done a good job, I feel _____.
15. When I run into someone I like a lot, but haven't seen in a long time, I feel _____.

Week 3

Focus: Distinguishing between thoughts and feelings
Identifying self-talk

Materials: Keys, constitution, pencils, Self-talk cartoon worksheets, chart of Feelings Words

1. Opening

- a) Round - "I am _____ and the hardest feeling for me to feel is _____."
- b) "Does anyone have anything going on in their life now that they would like to talk about?"

2. Review of Feelings

Ask the group to recall as many "feeling words" as possible from last week's class. Put up their chart of Feeling Words. Review which feelings are okay or not okay:

- * Stand up if it's okay to feel _____.
- * Sit down if it's okay to feel differently about the same thing.
- * Stand up if the feeling I call out is uncomfortable for you to feel.
- * Sit down if the feeling I call out is comfortable for you to feel.

3. Thoughts vs. Feelings

"Note that most of the "feelings words" are just one word. Feelings can be felt in your body. Where in your body can you feel sadness? Fear? Anger? Sometimes people confuse their feelings with their thoughts."

Example: "I feel like punching him in the mouth."
What is the "feeling word"?
It's a thought or opinion, not a feeling.

The phrases "I feel like . . ." and "I feel that . . ." are usually followed by a thought or opinion, not a feeling.

Activity: Have each student point to their head if the statement is a thought and point to their heart if the statement is a feeling.

- 1) I feel scared about the test tomorrow.
- 2) I feel like I can't trust you.
- 3) I feel annoyed because you won't leave me alone.
- 4) I feel embarrassed when you say those things about me.
- 5) I feel that you aren't listening to me.
- 6) I feel like you can't keep a secret.
- 7) I really feel upset when act like a jerk.

(For each, ask what the "feeling word" is. For thoughts, also ask what the feeling might be behind the thought.)

4. Self-Talk Pantomimes

"Now that you understand the difference between thoughts and feelings, we want to change the focus to look at thoughts - the things we tell ourselves.

a) Pantomime #1

Facilitator explains s/he will tell a story about something that is happening to a volunteer student (who is standing in front of the group). The group is to guess what sorts of things the student might be saying to her/himself in that situation.

"Yesterday _____ got a new haircut. S/he was excited about it at the time, but when s/he got home and looked in the mirror, s/he thought it looked awful. Today s/he is walking down the hall at school with the new haircut."

What do you think _____ is saying to her/himself? (Write their responses on newsprint).

"How might s/he be feeling?"

b) Pantomime #2

Ask for another volunteer.

"In the kitchen at home _____ was busy doing something and didn't notice a jar of peanut butter on the counter which s/he accidentally knocked on the floor. It smashed. His/her mother hears it, comes into the kitchen, sees the mess and starts to yell." (Pantomiming the yelling will allow students to fill in the words that they identify with).

"What do you think _____ is saying to her/himself?" (Write down their responses).

"How might s/he be feeling?"

5. Self-Talk Worksheet

Pass out the sheets and pencils.

Instructions:

- a) In each of the boxes, read the situation, then imagine that it is you in this situation. What is the first thought you would have in this situation? What would you be telling yourself?
- b) Write that thought in the "thought bubble."
- c) Then write the feeling you would have in the body.

- d) Do the same for all four situations.

Processing:

- Ask each person to read their self-talk for #1. Not the variety of possible self-talk.
- Emphasize that whatever their self-talk is is OK (just like their feelings). We'll get into disputing next week.
- Ask each person to say what their feeling was for #1. (You may need to help some distinguish between thoughts and feelings).
- Process the others in the same way.

6. Closing

Round - "What did you learn today?"

7. Homework:

This week notice what you say to yourself when you encounter a difficult situation. We'll be checking in with you next week.

Week 4

Focus: Practice disputing self-talk

Materials: Self-talk II worksheet, pencils, continuum signs, tape

1. Opening

- a) Round - "I am _____ and something special about me is _____."
- b) Check homework from last week: Who is willing to share a difficult situation you encountered and what you said to yourself.
- c) "Does anyone have anything going on in their life right now that they would like to talk about?"

2. Review Thoughts and Feelings

- a) Ask if there is anyone in the group who has performed in front of other people (music, sports, dance, etc.).

b) Ask that person to describe the situation. Ask how s/he felt and what s/he was telling her/himself - to identify the feeling and the self-talk.

b) Ask the group:

"How was s/he feeling?"

"Is it OK for her/him to feel that way?"

"What was s/he telling her/himself?"

"Is it OK for her to be telling her/himself that?"

"How might what s/he is telling her/himself affect how well s/he performs?"

"What else could _____ tell her/himself in that situation?"

"How might that self-talk affect the outcome?"

"Who else can think of a situation in which what they told themselves affect how well they did at something?"

"When do you have the power to change what you say to yourself?"

"In what situations do you think you might want to change what you're saying to yourself?"

d) "Imagine two basketball players. There are two seconds left in the game and the score is tied. They are up at the free throw line and have one shot to win the game. Player #1 says to himself: Oh no, this is it. If I blow it now, my career will be ruined; I'll probably get cut from the team. Everyone is watching me. Player #2 says to himself: OK, take a deep breath. Relax. I've made this shot a thousand times, I can make it once again. I'll just imagine that I'm in the gym practicing by myself. It's no big deal."

"Which player is more likely to make the shot?"

"If both miss the shot, how will Player #1 feel about himself? How will Player #2 feel about himself?"

*** "Sometimes what you think won't change the outcome, but it will affect how you feel about yourself."

3. Continuum

a) Hand out Self-Talk II worksheet. Have them write down one thought they might have in that situation.

b) Set up continuum -
 FEEL BAD ABOUT MYSELF
 FEEL NOT SO GOOD ABOUT MYSELF
 FEEL GOOD ABOUT MYSELF

- c) Have students, in their mind, pick the spot on the continuum that matches how they feel when they tell themselves what they wrote in situation #1.
- d) Have students stand on the spot they just picked along the continuum. Remind them that there are no right or wrong thoughts or feelings.. What they think or feel is theirs and as such is precious.
- e) Ask volunteers to read their statement. If on the low end of the continuum, ask: "Where do these messages come from?"
- f) Ask: "Whose right is it to feel that way?"
"Who has the right and power to change?"

Ask any of them if they would like to change where they are on the line. If so, "What could you tell yourself instead?"
- g) Have them say the new statement and move along the line to the new feeling that corresponds with the new self-talk.
- h) Continue the process for all the items on the sheet. Remind them that any of their thoughts are fine and any time they want to change how they feel about something, they have the power to change what they say to themselves.

4. Closing

Round of: I am _____ and something I can say to feel good about myself is _____.

5. Homework

When you find yourself in a difficult situation, notice what you're saying to yourself and how you're feeling. And if you want to, change your thoughts.

Week 5

Focus: Identifying and disputing self-talk within a family system.

Materials: Simpson poster, charts on roles, markers, continuum markers, self-talk worksheet, index cards

1. Opening

(Set up continuum signs)

- a) Round - "I am _____ and something I did well this week is _____."
- b) Check on homework from last week: "Who is willing to share a difficult situation they encountered, what they said to themselves and how they felt."
- c) "Does anyone have anything going on in their life right now that they would like to talk about?"

2. Family Roles

- a) "Today we're going to look some more at self-talk - the things we tell ourselves. We'll do that by looking at the roles people play in their families."
- b) Present the five charts with a brief description of each role. Emphasize that roles are interchangeable; that we assume different roles at different times in our life.
- c) "Family roles are coping skills. They may cause problems. The role played serves a purpose in the family. It may help you feel safe in your family. You may also feel locked into playing it. You may also continue playing the same role outside your family, even though it may not be useful there. You may forget that you have the power to step out of any role and just be yourself."
- d) Present the Simpson poster and ask children to identify who takes on which roles.

3. Family Role Self-Talk

Ask children to identify the self-talk of each role and write them down on the charts. Phrases to elicit self-talk are: "I always have to . . . ; If I don't, then . . . ; I wish that . . ."

4. Self-Talk in their Own Family

- a) On an index card have the students write down which role(s) they think they play in their family.

- b) On the back have them write down three things they say to themselves in that role.
- c) Tape the five roles/charts around the room. Ask students to stand under the role they most identify with, that fits them. Process:
 - * What are you telling yourself in this role?
 - * Are you the risk taker (positive side) or the scapegoat (negative side)?
 - * Pick a spot on the continuum that relates to how you feel in this role.
 - * If you want to change how you feel, what would you need to say differently to yourself?

- * Does anyone here have the power to change their role?
- * What other role would you like to try on?
- * What could you tell yourself to get there?
- * Go ahead and make your move!
- * What are you telling yourself now?
- * How do you feel about yourself?

5. Power Time I

- a) Have children select one thing they say to themselves in their family.
- b) Place themselves on the continuum.
- c) Ask for volunteer to say their self-talk statement.
- d) If the volunteer wants to be somewhere else, have him/her move and say something to him/herself that fits the new place.
- e) Have as many as possible say their statements and move along the continuum.

6. Closing

In a round, pass the "Feel Good About Myself" sign around the circle. "Say something that you could say to yourself in your family that would make you feel good about yourself"

Or

I am _____ and one thing I learned about myself today is

Week 6

Focus: Role models - People who have overcome severely difficult situations (alcoholism, drug addiction, abuse, etc.) and have changed their lives for the better.

1. Guest Speakers

Introduce guest speakers. Allow plenty of time for speakers to tell their story. Encourage questions from the audience. Direct speakers to share what they were saying to themselves during the difficult events of their lives and what they are saying now.

2. Processing

In small groups process the feelings, comments and personal stories the children offer.

Some guiding questions are:

- * What impressed you most about the speaker?
- * What did they say to themselves when they were taking drugs, being abused, etc?
- * What are they saying to themselves now?
- * How are you like the speaker?
- * What things did/do you say to yourself?
- * What happened (event, situation) that changed you?
- * How did you change your self-talk?
- * What do you say to yourself now when things are tough?

Week 7

Focus: Functional/Dysfunctional Family Systems

Materials: Family Systems Worksheet, Newsprint, Pencils

1. Opening:

- a) "Today we will be focusing on strengths and weaknesses within families. All families have some characteristics of both strengths and

weaknesses - qualities that support and nurture families and qualities that hurt members of the family.

- b) On a piece of newsprint list qualities of the speakers' families or the Simpsons that were helpful and ones that were not helpful. Ask students for examples from other families they know.
- c) Round: I am _____ and a strength my family has is _____.

2. Worksheet

- a) Pass out worksheets. Ask them to fill in several things in each of the two top boxes - in what way their family is helpful and not helpful. Assure them that what they write is just for them.
- b) In the "Negative Messages" box ask them to write down two or three messages they have gotten about themselves.
- c) In the "Truth" box ask them to write out what is true about them, instead of the negative message.

3. Process

- a) In a round, ask each to share (if they want to) any items from their helpful/not helpful lists.
- b) In a round, ask each person to share one or more of the negative messages and what's true about them instead. Be sure that what they say is true is not just a negation, i.e., "I'm not stupid" but an affirmation, i.e., "I'm smart." Have the rest of the group say aloud in unison the affirmation three times.

4. Closing

I am _____ and one person who knows the truth about me is _____ or one person who loves me no matter what is _____.

Week 8

Focus: Wrapping up
 Evaluations
 Saying good-bye

Materials: ILAC Posters, ILAC pencils, evaluations

1. Opening

Round: I am _____ and one thing I learned this past eight weeks is _____
or how I feel about the group ending is _____.

2. Evaluations

Pass out evaluations and ask students to fill them out.

3. ILAC Posters

Pass out posters and give students time to fill in their names and to decorate.
Tape them around on the walls and have each student write something
positive, something they appreciate about that person on their poster. Remind
them what it would feel like to receive put-downs on their poster.

4. Good-bye

APPENDIX F

ANALYSIS OF COVARIANCE: POSTTEST 1 CDI TOTAL SCORES
OF THE TREATMENT GROUP, ATTENTION-PLACEBO GROUP,
DELAYED TREATMENT GROUP, AND CONTROL GROUP
USING PRETEST SCORES AS THE COVARIATE

Analysis of Covariance: Posttest 1 CDI Total Scores of the Treatment Group, Attention-Placebo Group, Delayed Treatment Group, and Control Group Using Pretest Scores as the Covariate

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	11242.15	185	60.77		
Regression	89.05	1	89.05	1.47	.228
Group	456.29	3	152.10	2.50	.061

Analysis of Covariance: Posttest 1 CDI Subscale Scores of the Treatment Group, Attention-Placebo Group, Delayed Treatment Group, and Control Group Using Pretest Scores as the Covariate

<u>Negative Mood Subscale</u>					
<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	597.73	192	3.11		
Regression	2.14	1	2.14	.69	.408

Negative Mood Subscale--continued

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Group	8.38	3	2.79	.90	.444

Interpersonal Problems Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	292.27	190	1.54		
Regression	.15	1	.15	.10	.752
Group	2.03	3	.68	.44	.725

Ineffectiveness Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	655.75	190	3.54		
Regression	3.70	1	3.70	1.07	.302
Group	58.13	3	19.38	5.61	.001

Anhedonia Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	1400.60	188	7.45		
Regression	.91	1	.91	.12	.727
Group	28.74	3	9.58	1.29	.281

Negative Self-Esteem Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	668.77	189	3.54		
Regression	3.81	1	3.81	1.08	.301
Group	25.13	3	8.38	2.37	.072

APPENDIX G

SPLIT-PLOT ANALYSIS OF VARIANCE: GROUP BY TIME ANALYSIS
OF CDI TOTAL SCORES OF THE TREATMENT GROUP, ATTENTION-
PLACEBO GROUP, DELAYED TREATMENT GROUP, AND CONTROL
GROUP AT PRETEST, POSTTEST 1, AND POSTTEST 2

Split-Plot Analysis of Variance: Group by Time Analysis of CDI Total Scores of the Treatment Group, Attention-Placebo Group, Delayed Treatment Group, and Control Group at Pretest, Posttest 1, and Posttest 2

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	17382.69	338	51.43		
Time	19.37	2	9.68	.19	.828
Group by Time	287.25	6	47.87	.93	.473

Split-Plot Analysis of Variance: Group by Time Analysis of CDI Subscale Scores of the Treatment Group, Attention-Placebo Group, Delayed Treatment Group, and Control Group at Pretest, Posttest 1, and Posttest 2

Negative Mood Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	959.52	364	2.64		
Time	3.88	2	1.94	.74	.480

Negative Mood Subscale--continued

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Group by Time	6.75	6	1.12	.43	.861

Interpersonal Problems Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	478.42	358	1.34		
Time	1.39	2	.69	.52	.596
Group by Time	10.24	6	1.71	1.28	.267

Ineffectiveness Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	1129.28	362	3.12		
Time	3.62	2	1.81	.58	.560
Group by Time	15.12	6	2.52	.81	.564

Anhedonia Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	2283.44	350	6.52		
Time	22.39	2	11.20	1.72	.181
Group by Time	41.70	6	6.95	1.07	.383

Negative Self-Esteem Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	1118.96	354	3.16		
Time	3.38	2	1.69	.54	.586
Group by Time	19.23	6	3.20	1.01	.416

APPENDIX H

ANALYSIS OF COVARIANCE: POSTTEST 1 CDI TOTAL SCORES OF THE
TREATMENT GROUP AND CONTROL GROUP AND POSTTEST 2 CDI
TOTAL SCORES OF THE ATTENTION-PLACEBO GROUP AND
DELAYED TREATMENT GROUP USING PRETEST SCORES
AS THE COVARIATE

Analysis of Covariance: Posttest 1 CDI Total Scores of the Treatment Group and Control Group and Posttest 2 CDI Total Scores of the Attention-Placebo Group and Delayed Treatment Group Using Pretest Scores as the Covariate

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	8811.03	178	49.50		
Regression	778.00	1	778.00	15.72	.000
Group	424.90	3	141.63	2.86	.038

Analysis of Covariance: Posttest 1 CDI Subscale Scores of the Treatment Group and Control Group and Posttest 2 Subscale Scores of the Attention-Placebo Group and Delayed Treatment Group Using Pretest Scores as the Covariate

<u>Negative Mood Subscale</u>					
<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	479.18	186	2.58		
Regression	32.24	1	32.24	12.52	.001

NOTE TO USERS

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UMI

Anhedonia Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	1024.35	181	5.66		
Regression	92.28	1	92.28	16.31	.000
Group	40.25	3	13.42	2.37	.072

Negative Self-Esteem Subscale

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
Within and Residual	560.93	183	3.07		
Regression	6.43	1	6.43	2.10	.149
Group	31.15	3	10.38	3.39	.019

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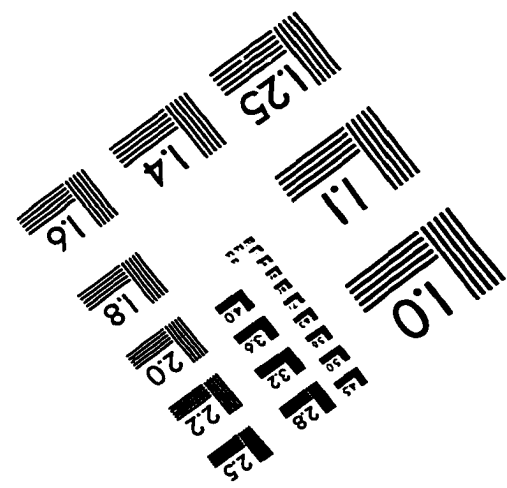
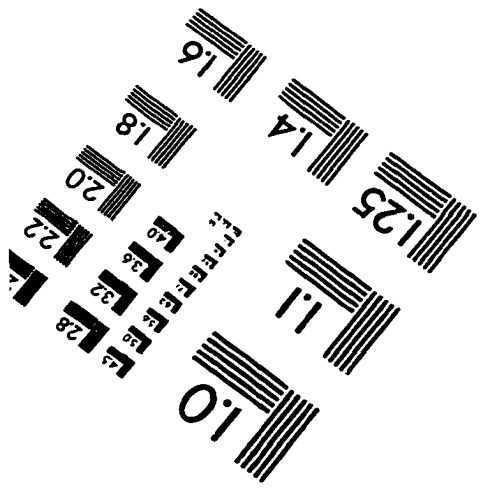
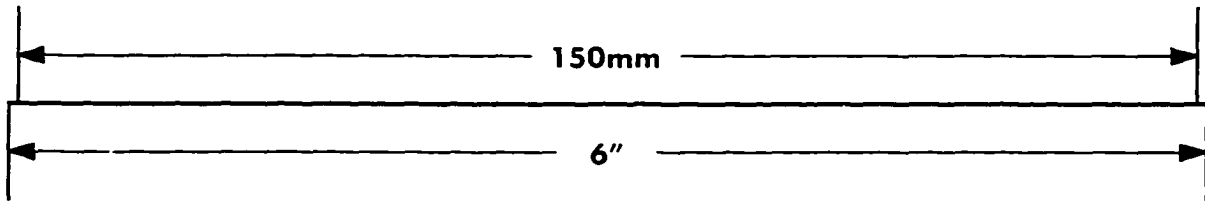
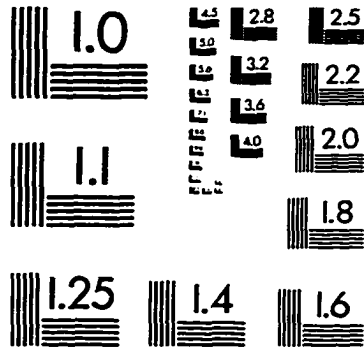
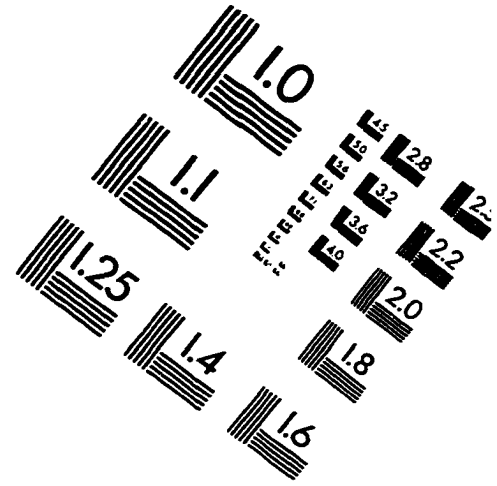
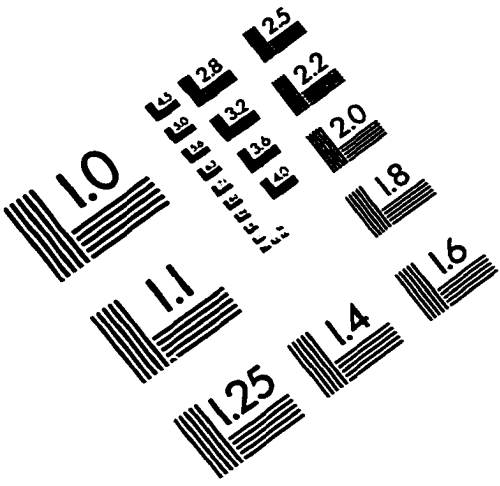
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IMAGE EVALUATION TEST TARGET (QA-3)



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