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A FOLLOW-UP STUDY OF A PRIMARY PREVENTION PROGRAM  
TARGETING CHILDHOOD DEPRESSION

by

Norman Chris Johnson

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

UTAH STATE UNIVERSITY  
Logan, Utah

2000



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## ABSTRACT

A Follow-Up Study of a Primary Prevention Program  
Targeting Childhood Depression

by

Norman Chris Johnson, Master of Science

Utah State University, 2000

Major Professor: Dr. Susan L. Crowley  
Department: Psychology

Children have not historically been the subject of research focusing on internalizing disorders (i.e., childhood depression), even though childhood depression continues to be viewed as one of the most prevalent affective problem within this population. Over the past two decades, a small portion of that literature describes prevention efforts in public schools. There has been a growing body of literature centered on childhood depression. However, there are only three studies that report on longitudinal findings that have taken a primary prevention approach.

The present study was a follow-up investigation to delineate the effects of a school-based primary prevention program. The original study utilized a social/interpersonal and cognitive-behavioral model incorporated into the health education curriculum of the school.

The results of the study suggest that the students continued to report normal to

low levels of depressive symptoms at one-year follow-up. The results also suggest that students maintained the social skills gained during the intervention at the one-year follow-up. In addition, reports of depressive symptomatology slightly declined from posttest to one-year follow-up.

(107 pages)

## DEDICATION

## YU-WAKAN-PI

Miya taku waste-wada qa wopida epa wacin de Tiwahe mitawa qa koda-wacawaye hena wopida tanka eciciyapi, tuka o-ma-ya-ki-yapi hcon woonsape wa-kan-tuya O'Canku wa-ku-wa kin wanna wa-dus-tan ce.

I-yo-tan-han Deksinom tah-pi esta wica-wek-suye, heced Deksi Norman Tasunka Ota Redwing, Sr. qa Donald Culbertson, tuka O-wi-hanke-wanica Wok-sape, wo-okiyeyeqa wo-wa-sake ma-ku-pi ece.

Nakun, win-yan wan Lorraine German eci-yapi he wopida iwakiye, tuka Miye wica-ma-da qa wo-okiyeyema-ya-qu, o' ma-ya-ki-ye qa wanna Wo-on-spe wa-kan-tuya iwacu do.

Miye wo-onspe wa-kan-tuya wowapi kin de wo-wakn un Ate waye Christopher R. Johnson, Jr. wanna ed unsni sta, qa, Ina waye Shirley E. Johnson hena wica-wa-qu do. Ni-ye-pi un taku owasin wo-wah-yu-pi-ke unspe ma-ya-ki-ya-pi do, I-yo-tan-han wo-ohoda, wo-yu-o-ni-han, wa-wi-ca-qu-pi, qa an-wan-mi-ci-hde-ke nakun Oyate an-wan-wica-wa-bda-ke kta .

Pida ma-ya-ya-pi do

Norman C. Johnson

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Mitakuye Oyasin,

Norman Chris Johnson

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## CHAPTER I

### INTRODUCTION AND PROBLEM STATEMENT

Historically, little empirical work exists in the area of childhood depression because of the controversy that surrounded the very existence and nature of the disorder in children (Kaslow & Rehm, 1991). Yet, currently depression is viewed as one of the most prevalent mental health problems in children (Lewinsohn, Clarke, Hops, & Andrews, 1990). The lifetime prevalence of mood disorders in childhood in the United States has been estimated to be as high as 17% by a recently completed epidemiological study (Kessler et al., 1994). Other epidemiological data suggest that 15-22% of the nation's 63 million children and adolescents have mental health problems severe enough to warrant treatment (Tuma, 1989). Depression during childhood years is associated with deficits in cognitive and social functioning, and is often manifested in poor school functioning and social interactions (Kovacs & Goldston, 1991). Research findings suggest that depression can be expected to interfere with adolescents' optimal performance at school and in their social interactions (e.g., Kovacs & Goldston, 1991; Ralph & Nicholson, 1995). Given the critical ramifications of depression, targeting depression in its earliest stages (i.e., with younger children) may prevent long-term debilitating mental health, academic, social, and physical problems (Black-Cecchini, 1997).

Depression can be conceptualized as a single symptom (i.e., sadness), a syndrome (an aggregate of a negative mood and associated symptoms such as hopelessness, worthlessness, suicidal ideation, and fatigue), or as a psychiatric disorder (Curtis, 1992).

Depression as a syndrome or disorder is included under the larger category of internalizing disorders (Achenbach & Edelbrock, 1984). The broad band of internalizing problems or disorders subsumes a variety of symptomatology, including dysphoric mood states (depressive mood), social withdrawal, anxious and inhibited reactions, and the development of somatic problems (Merrell, 1994). The area of internalizing problems is perhaps the most difficult in which to establish a solid link between assessment and intervention. One of the major reasons that this link has been so tenuous is the nature of internalizing problems. Given that internalizing problems often involve subjective individual perceptions and states, there are not likely to be as many tangible and directly observable behaviors to consider for intervention (Merrell, 1994). Despite the identified importance of internalizing disorders in childhood, intervention efforts have been impeded by the difficulty in detection and problems in determining severity. The very nature of internalizing disorders, consisting of relatively covert, often unobservable symptoms, presents difficulty in diagnosis (Reynolds, 1990). Yet, there is strong evidence to suggest the potential for an internalizing disorder diagnosis to result in negative outcomes later in life, prompting the need for earlier intervention (Merrell, 1994).

One theory for the cause of childhood depression, and perhaps the most salient characteristic, is the lack of appropriate social skills. As children mature into adulthood, these deficits have grave consequences. Deficits in social skills in children have been predictive of later adjustment problems and/or psychopathology (Bramlett, Smith, & Edmonds, 1994). Lewinsohn and Hoberman (1982) documented a relationship between depression and inadequate assertion skills, discomfort in social situations, infrequent social

interactions, and distressing negative cognitions regarding interpersonal exchanges. Behavioral models paved the way in investigating the relationship between social skills and depression, asserting that depression results from a lack of positive reinforcement (Black-Cecchini, 1997). Therefore, children who become depressed generate more irrelevant coping strategies than nondepressed children. Social resources appear to be an important component of effective coping with problems such as depression (Herman-Stahl & Petersen, 1996). It is also important to note that families, friends, and significant others may help children cope by allowing the opportunity for self-disclosure and emotional release, to give advice, and/or to seek resources needed to deal with problems.

There is emerging evidence that major depression can develop in prepubertal children and that it is a significant clinical occurrence among adolescents. Recent epidemiologic studies have shown that a large proportion of adults experience the onset of major depression during childhood, adolescence, and early adulthood (Brown, 1996). In spite of the proliferation of programs aimed at the prevention of mental illness during childhood, there is lack of information about their effectiveness.

Caplan (1964) applied public health principles to preventive mental health, defining three levels of prevention on mental illnesses: (a) tertiary, (b) secondary, and (c) primary prevention. Since Caplan's work was first published, each of these levels of prevention has developed its own programmatic definition. That is, tertiary prevention in mental health has developed its own element of rehabilitation in addition to minimizing the impact of established illnesses. Secondary prevention has come to include elements of screening and case identification as a means of early identification of illness. In order to reduce the

prevalence of mental illness, both tertiary and secondary interventions seek to limit the progression of illnesses, hence their duration. On the other hand, primary prevention is aimed at reducing the actual incidence of illness (Neligh, 1988). Primary prevention strategies differ from traditional treatment approaches with respect to the targeting and timing of their intervention practices. In particular, they are (a) systems- and group-oriented rather than targeted to individuals; (b) directed primarily toward essentially healthy people who are not currently suffering any disability due to the condition being prevented, although targets may appropriately include those who are epidemiologically at risk for negative behavioral outcomes; and (c) concerned with promoting health, building competencies, and establishing supportive systems and settings as a protection against dysfunction (Elias & Branden, 1988). Primary prevention programs are rare, but may have a pivotal impact on future development by averting a variety of problems emerging in childhood and adolescence, including depression (Black-Cecchini, 1997).

Although brief prevention programs may produce short-term behavioral gains, some researchers believe that it is unrealistic to expect such efforts to have lasting effects (Weissberg, Caplan, & Harwood, 1991). Programs that produce short-term benefits (psychological and physical health) have been established for children in preschool and kindergarten, elementary school, middle school, and high school (Elias et al., 1986). Most of these efforts have been brief (i.e., less than 1 year), single-method, single-level intervention strategies. It is evident that much larger and extended longitudinal studies are warranted in general with school-aged populations. But when the focus is on childhood depression, the need is even greater. According to Tarnowski, Simonian, Bekeny, and

Park (1992), no information exists concerning the acceptability of interventions used to treat internalizing (e.g., depression) child disorders. Therefore, creating multiyear, classroom-based skills training approaches as a core of a larger multilevel-system to promote social competence and health is a particularly promising direction for prevention research (Weissberg et al., 1991).

Primary prevention most easily falls within the purview of public schools, given that these interventions are designed for all students. Thus, primary prevention approaches are consonant with the universal nature of public school systems. Given the large amount of time that children spend in school settings, schools can function as an important setting for preventing depression (Levy & Land, 1994). Additionally, the primary grades through junior high school present many opportunities for the identification of social-emotional and behavior problems. The opportunities for primary prevention in these years of latency and early adolescence can be centered on how the learning process can be developmentally facilitated. Berlin (1979) encouraged explorative thinking about how one can learn to learn, and, especially in early adolescence, logic in a variety of problem solving efforts, and how to gather, assess, and use data to solve problems in all areas of living--all this is critical to sustained good mental health.

Although there are many promising demonstrations of beneficial prevention efforts, it is also true that many attempts at primary prevention fail to produce lasting behavior change (e.g., Weissberg et al., 1991). However, relatively few hours of instruction can produce large effects for knowledge acquisition (Connell, Turner, & Mason, 1985). These findings suggest that researchers need to design and evaluate more substantial interventions in

order to adequately test the extent to which classroom-based programs can produce long-term preventive effects (Wiessberg et al., 1991). One key in assessing long-term effects of prevention is to follow participants for longer periods of time after the intervention.

There are several factors unique to childhood depression that makes long-term follow-up vital. Those factors that appear to be most important are: the structure of the intervention implemented to alleviate childhood depression (e.g., intensity of intervention) and, long-term retention and recall of the intervention. Also, the content of the intervention is crucial, because instruction must address high-priority areas (e.g., social skills) to prove relevant to real needs and have maximum impact on depressive symptomatology. Furthermore, short-term follow-up may not have allowed the opportunity for the implementation of new skills (i.e., the knowledge may have been obtained, yet the opportunity to put the knowledge to use has not yet been presented; Black-Cecchini, 1997). Studies conducted to date that have addressed depression at a primary prevention level have had only short-term (i.e., less than one year) or no follow-up data available.

It is clear from the literature (e.g., Kahn, Kehle, Jenson, & Clark, 1990) that the question "do primary prevention programs have a lasting effect on childhood depression?" is one that has not been effectively researched. Thus, it is of particular importance in prevention/intervention research to be able to demonstrate that cognitive and behavioral changes are maintained over a substantial period of time. The goal of the present follow-up study is to attempt to determine if a social/interpersonal and cognitive-behavioral



intervention targeting childhood depression produced behavioral and knowledge benefits for children 1-year postintervention.

The current study was a follow-up investigation of a primary prevention program targeting depression that utilized a social/interpersonal and cognitive-behavioral model incorporated into the health education curriculum of the school. The study targeted social skills given the base of literature on the significant relationship between social skills deficits and childhood depression (e.g., Helsel & Matson, 1984; Herman-Stahl & Petersen, 1996; Shah & Morgan, 1996).

Follow-up assessments are important for the evaluation of intervention skills that are expected to continue over time. Interventions that are designed to change behavior and not merely to produce a transitory effect benefit from one or more follow-up measures. Because it is important to determine whether the intervention effects have a lasting impact or are transient, this study was a longitudinal investigation at 1-year follow-up to the original study.

In line with a primary prevention model, the intervention originally conducted targeted a group rather than individuals, was directed at healthy individuals that may be at risk for negative behavioral outcomes, and was concerned with promoting health. The intervention sample included four fifth-grade classes in a rural school district. The study was conducted using a Solomon four-group design with two intervention and two control classes. The intervention consisted of a total of eight 50-minute sessions, across 4 weeks. The subjects were originally assessed using self-report, sociometric, and rating-scale instruments. Follow-up data were collected 1 year later on a number of the same children.

The goal of the follow-up study was to determine if a primary prevention model of intervention produced behavioral and knowledge benefits for a sample of children.

Specific questions addressed were:

1. At 1-year follow-up, was there a difference (e.g., statistical significance and effect size) in social skills ratings between intervention and control groups?
2. At 1-year follow-up, was there a difference (e.g., statistical significance and effect size) in depressive symptomatology ratings between intervention and control groups?
3. What was the magnitude and direction of the relationship between depressive symptomatology and social skills level at 1-year follow-up?
4. Was there retention of knowledge for skills taught during the intervention 1 year later?



## CHAPTER II

### REVIEW OF THE LITERATURE

The following review of literature will cover several areas relevant to childhood depression and prevention. Specifically, internalizing disorders will be defined, followed by a definition of childhood depression. Internalizing problems are an intriguing and problematic area because often they are difficult to detect, with symptoms sometimes blending together (Merrell, 1994). Also, childhood depression can be represented by a variety of characteristics. Depressive disorders are divided into categorical diagnoses, such as those described in the Diagnostic and Statistical Manual of Mental Disorders-- Fourth Edition (DSM-IV, American Psychiatric Association, 1994). For example, according the DSM-IV (APA, 1994), depression becomes a disorder when a certain number of criteria are present for a certain length of time (e.g., major depressive disorder - five or more symptoms present during 2-week period). Depressive disorders, also referred to as mood disorders, involve disturbances of emotion that affect a child's entire life (Cicchetti & Toth, 1998).

Prevention levels will be reviewed because a great deal of confusion exists with respect to what actually constitutes prevention. Literature relating to the relationship between social skills and childhood depression will be presented. Deficits in social skills have been implicated as a cause and a consequence of depression in children. The correlates and prevalence associated with childhood depression will be reviewed followed by a brief outline of other prevention programs (i.e., drug/alcohol and suicide) as a

comparison for the present study. Finally, intervention studies focusing on children and adolescents that target the prevention of depression will be reviewed in depth.

### Definition of Key Constructs

#### Internalizing Disorders

Children are an underserved population in the area of mental health intervention and research. It has only been in the last decade that research focused on internalizing or inner-directed disorders of childhood (Reynolds, 1990). Reynolds further explains that internalizing disorders are relatively covert and present difficulties in diagnosis because oftentimes they are unobservable. Historically, internalizing disorders of childhood were viewed as developmental phases that children "pass through" and therefore researchers ignored them and primarily focused on externalizing disorders (Brown, 1996; Stark, 1990; Williams, 1997).

Achenbach and Edelbrock (1978) clarified, through statistical analysis, two main broad-band syndromes each consisting of specific narrow-band behaviors or disorders. The broad-band categories are externalizing or under-controlled behaviors and include aggressiveness, acting out, and conduct disorders. Internalizing or over-controlled behaviors include anxiety, social withdrawal, and depression. Both externalizing disorders and internalizing disorders are used to classify children on the basis of their psychological, emotional, and behavioral symptomatology that may be manifested. Externalizing behaviors include acting-out in an antisocial or an inappropriate social manner (Campbell, 1996). Externalizing disorders are difficult to overlook because they are usually annoying

and disruptive, and often create problems for other individuals in the same environment as the child who exhibits these problems (Campbell, 1996; Merrell, 1994).

Conversely, with internalizing disorders, the child is immediately impacted.

Internalizing disorders include a wide variety of symptomatology, such as the development of dysphoric mood states (depressive symptoms), social withdrawal, anxious and inhibited reactions, and the development of somatic problems, often persisting into adulthood (Campbell, 1996; Merrell, 1994; Walters, 1996). It was not until the Diagnostic and Statistical Manual of Mental Disorders--Third Edition (American Psychiatric Association, 1980) that explicit attention was given for disorders first evident in infancy, childhood, and adolescence. Currently, children need to meet the same criteria and can be given a diagnoses identical to adults (e.g., mood disorder). Given the lack of research in this area, the long-standing issue of whether internalizing disorders in childhood should be differentiated from adults appears valid (Kazdin & Marciano, 1998). The current nosological system, DSM-IV (APA, 1994), includes a number of general diagnostic categories that fit within the internalizing domain, including anxiety disorders, mood disorders, certain aspects of eating disorders, tic disorders, and somatoform disorders. There is no separate diagnostic category for depression in children and adolescents; instead, adult diagnostic criteria are slightly modified for application to the younger population. Specific modifications include substitution of irritability for depressed mood and minor changes in duration of symptoms for the diagnosis of dysthymia disorder from 2 years to 1 year.

Addressing internalizing disorders is critical because they are associated with a variety of negative outcomes in childhood, including poor peer relationships and low self-esteem (Black-Cecchini, 1997; Levendosky, Okun, & Parker, 1995; Stark, 1990; Walters, 1996). Low self-esteem not only affects how children feel about themselves in general, but is strongly associated with academic achievement problems (Black-Cecchini, 1997; Kazdin & Marciano, 1998; Lewinsohn et al., 1990; Merrell, 1994; Merrell & Gimpel, 1998). Despite the identified importance of internalizing disorders in childhood, intervention efforts have been thwarted by the difficulty in detection and problems in determining severity. Only recently have these disorders become a primary interest of prevention researchers. This interest was stimulated in part by the formal recognition that many internalizing disorders in children persist over time and by the publication of the DSM-III (APA, 1980). Over the past two decades there has been increased attention to the study of internalizing disorders, and specifically, childhood depression (e.g., Black-Cecchini, 1997; Cantwell, 1990; Cicchetti & Toth, 1998; Kazdin, 1990; Tarnowski et al., 1992; Walters, 1996).

#### Definition of Childhood Depression

Cicchetti and Toth (1998) reported that depression is typically operationalized in three ways, including depressed mood, depressive syndromes, and depressive disorders. Depressed mood is defined by a single symptom or group of symptoms (e.g., lowered self-esteem, social withdrawal, anhedonia, lack of concentration, changes in behavior, and

changes biological functions) that involve dysphoric affect (Cicchetti & Toth, 1998; Merrell, 1994; Williams, 1997).

Merrell (1994) described the syndrome of depression as the coexistence of behavioral and emotional symptoms, and it involved not only mood changes but additional changes in psychomotor functioning, cognitive performance, and motivation. Cicchetti and Toth (1998) described a depressive syndrome as involving sets of symptoms that have been shown to coexist empirically. In addition to the feelings of sadness, other symptoms exhibited by depressed children may include: a dramatically lowered self-esteem, social withdrawal, anhedonia, poor concentration, poor academic performance, erratic or even bizarre behavior patterns, and alterations of biological functions, such as sleeping, eating, or elimination (APA, 1994; Cicchetti & Toth, 1998; Kazdin, 1990).

The DSM-IV (APA, 1994) identifies that certain symptoms including somatic complaints, irritability, and social withdrawal are particularly common in children. There may also be changes in the behavior associated with depression that take place at puberty. For example, depressed prepubertal children are more likely to show somatic complaints, psychomotor retardation, and depressive hallucinations, whereas depressed adolescents are more likely to show high levels of hopelessness, hypersomnia, and weight changes (Ryan et al., 1987).

Historically, there has been considerable debate over the presence of a depressive syndrome in children. However, as previously stated, the current conceptualization is that childhood depression does exist in a form similar to that found in adults. Ryan et al. (1987) reported the results of a factor analysis used to determine which types of symptoms

tend to cluster together in depressed children. As with adults, the authors found items clustering on an "endogenous" factor (including depressive affect, anhedonia, fatigue, and psychomotor retardation) and an anxious factor (including anxiety, insomnia, and somatic complaints). Other factors included one characterized by negative cognitions and suicidal ideation, a second characterized by changes in appetite and weight, and a third related to irritability and acting-out conduct problems. In a related study, depressed children were found to generate more irrelevant strategies for coping with problems than nondepressed children, and they were more likely to suggest avoidant or negative behaviors as strategies for alleviating negative affect, a finding similar to results shown with adults (Herman-Stahl & Petersen, 1996).

Merrell (1994) reported that the distinction between depressive syndromes and disorders is not as formidable as between depressive symptoms and disorders. The primary way of defining depression as a disorder is within the framework of the DSM-IV (APA, 1994; Kazdin & Marciano, 1998). A major depressive episode is the base syndrome of severe depression. Many of the individual diagnoses in the mood disorders group (e.g., major depressive disorder) require that the person first fulfill the criteria for a major depressive episode (e.g., depressed mood, anhedonia, weight gain or loss, insomnia or hypersomnia, and fatigue; APA, 1994). A depressive disorder may be characterized by a pervasive mood disturbance that involves feelings of sadness and anhedonia in conjunction with disturbances in sleep, appetite, concentration, libido, and energy (Cicchetti & Toth, 1998). Basically, it involves disturbances of an individual's entire life. The proposed study focused on depression as a syndrome.



### Definition of Prevention Levels

One of the most widely cited conceptualizations of prevention was provided by Caplan (1964). He differentiated three levels of implementation: primary, secondary, and tertiary. Primary prevention aims at reducing the incidence or the number of new cases of a disorder occurring within a given population. By contrast, secondary and tertiary prevention involve efforts to reduce the prevalence or the number of existing cases of a disorder in a population. Secondary prevention emphasizes early identification and treatment of individuals experiencing problems or disorders, while tertiary efforts actually are rehabilitative, directed toward preventing further deterioration in those with serious problems (Zins, Conyne, & Ponti, 1988). In the childhood depression literature, few studies have taken a primary prevention focus. Given that depression can have serious implications for later development, such as increased risk for future depression, suicide, substance abuse, and other psychiatric problems, primary prevention merits serious consideration (Black-Cecchini, 1997; Clarke, Hawkins, Murphy, & Sheeber, 1993).

### Definitions of Social Skills

The research on social skills has extended to a number of disciplines. Social skills deficits have been investigated for their role in both internalizing and externalizing disorders and for their impact on future personal and interpersonal development (Black-Cecchini, 1997; Clarke et al., 1993; Ralph & Nicholson, 1995). Given that deficits in social skills are related to increased levels of childhood depression and have been

implicated as an etiological factor for depressive problems, a detailed definition of social skills will be reviewed at this time.

Merrell (1994) defined social skills as specific behaviors that lead to desirable social outcomes for the person initiating them. Developing social skills is particularly important in middle childhood years because it is during this period of development that children begin to broaden their social networks and to invest more time and energy outside the home (Levendosky et al., 1995). Developing age-appropriate competencies is paramount in the formation of positive and stable peer relationships. Social competence and social problem-solving skills are understood to be both the outcome of previous experiences as well as predictors of current and future adjustment and psychopathology (Parker & Asher, 1987).

A burgeoning body of behavioral research attests to the strong association between interpersonal skill deficits and depression. Specifically, researchers in this area have documented a relationship between increased depression and inadequate assertion skills, discomfort in social situations, infrequent social interactions, and distressing negative cognitions regarding interpersonal exchanges (Black-Cecchini, 1997; Herman-Stahl & Petersen, 1996; Levendosky et al., 1995; Lewis, Sugai, & Colvin, 1998; Merrell, 1994; Merrell & Gimpel, 1998; Shah & Morgan, 1996; Stark, 1990; Van Hasselt, Null, Kempton, & Bukstein, 1993).

Currently, researchers seeking to operationally define what constitutes social skills are often subjective in their interpretations (i.e., relationship with a closely related construct, social competence) and definitions are nonexistent in some empirical reports



found in the literature (Black-Cecchini, 1997). Gresham (1986) helped lessen the subjectivity seen in the literature by providing a useful operational definition of social skills. He defined social skills by viewing them as part of the broader construct of social competence (Black-Cecchini, 1997; Gresham, 1986; Merrell & Gimpel, 1998). Social competence is considered to be a complex, multidimensional construct, consisting of a variety of behavioral and cognitive skills, along with aspects of emotional adjustment, useful and necessary to developing adequate social relations and obtaining desirable social outcomes (Gresham, 1986; Merrell, 1994; Merrell & Gimpel, 1998).

Gresham's (1986) model of social competence is based primarily upon two constructs, adaptive behavior and social skills and a consequence of socially competent behavior (peer acceptance). In considering each aspect of this definition, adaptive behavior may be defined as how an individual meets the standards of personal independence and social responsibility (Merrell, 1994). Social skills may be defined as a set of behaviors that maximize the likelihood of positive reinforcement (Gresham & Reschly, 1987), while peer acceptance represents the outcome of socially acceptable behavior. The lack of social skills or competence has been implicated in childhood depression. Merrell and Gimpel (1998) reported that even though there are many unanswered questions concerned with the relationship between social skills and childhood depression, social skills training appears to be a valid treatment of depressive symptoms in children.

## Etiology, Risk Factors, and Correlates of Depression

An important research and clinical task is to differentiate between normal children and adolescents and those with psychological disorders. The following review will discuss the etiology, risk factors, and correlates of childhood depression. This is important because there is little question that major depression has an adverse effect on a child's academic performance, damages family and peer relationships, may increase alcohol and drug use, and may lead to suicide attempts.

### Etiology of Depression

The literature reviewed in this section is not intended to be exhaustive. The intent of such a selective review is to highlight details important to the etiology of depression in childhood. Because of the limited research available in the area of childhood depression, models of the etiology of depression in adults will be discussed as well.

The etiology of depression is complex and has only recently been studied in child and adolescent populations (Kazdin, 1990). As of yet, no comprehensive theory of the etiology of child and adolescent depression has been developed. However, extensive work has been conducted on the etiology of depression in adults. These studies with adults, though not directly applicable, provide useful information for understanding the etiology of depression in children (Curtis, 1992). In many respects, developments in the child literature have mirrored advances in the treatment of adult depression. Diverse conceptual models, cognitive, behavioral, genetic, biochemical and others, have emerged with multiple variations identified (Kazdin, 1990). In addition, it may be useful to

consider some of the unique characteristics of children and adolescents that are not derived or extrapolated from the adult literature.

One of the most popular models of depression in the adult literature is the cognitive model. Cognitive theories of depression share the assumptions that psychological processes involved in "knowing" or "coming to know" are primary in the etiology and/or the manifestation of the symptoms of depression. Most cognitive models presume that cognitive activity is a primary determinant of affective and behavioral components of depression, although they do not necessarily posit a primary etiological role of cognition in depression. According to Mann (1989), cognitive models of depression invoke one or more of the following hypothetical constructs: *cognitive schema*--an abstract, internal, experience-based structure that guides the organization and storage of incoming information; *cognitive diathesis-stress mechanisms* that presume latent cognitive structures (e.g., schemas) are activated by specific environmental stressors; *cognitive attributions*, internally consistent and conditioned patterns of cause-effect thinking; and other types of *covert behavior*, that is, cognitive events presumed to conform to principles of classical conditioning and operant models of learning (Mann, 1989; Shelton, Hollon, Pardon, & Loosen, 1991).

One of the most widely studied cognitive theories of depression is that of Beck (1967), who has argued that cognitive structures or schemata affect the encoding, storage, and retrieval of information. He postulated that depressed individuals have negatively biased schemata that lead them to filter out positive information selectively and to exaggerate negative information. They then make specific dysphoria-provoking cognitive

errors that result in a negative view of the self, current circumstances, and the future. Beck noted a tendency for patients' expressed expectations of negative outcomes to precede the onset of core symptoms of depression: depressed motivation, feelings of hopelessness and associated ideas (e.g., the will to avoid or escape anticipated negative outcomes, feelings of inordinate dependency), motor retardation, agitation, and fatigue. From these observations of the temporal pattern of symptom onset, it was inferred that certain (depression-prone) individuals became symptomatically depressed when stressful stimuli evoked the onset of habitual negative thinking (Curtis, 1992; Mann, 1989).

Another important theory of depression is the reformulated learned helplessness model, which postulates that depression follows the experience of a negative event when the individual explains the event by internal, stable, and global terms (Abramson, Seligman, & Teasdale, 1978). The original learned helplessness model of depression posits that repeated exposure to uncontrollable events results in motivational, affective, and cognitive deficits (Seligman, 1975). The motivational deficit is postulated to be the delayed initiation of voluntary responses; the affect is decreased or sad affect; and the cognitive deficit is presumed to be an interference with the learning of the association between responses and environmental feedback (Mann, 1989). Mann further stated that consequently, depressed individuals fail to accurately perceive a response-outcome contingency when outcomes are contingent upon their own performance. Seligman's (1975) formulation identifies learned uncontrollability as the key determinant of depression; as a corollary, it is hypothesized that depression develops under conditions of uncontrollable failure to elicit reinforcement.

Because of some limitations of the original theory, it was reformulated by Abramson et al. (1978). In the modified version two important interrelated factors were introduced: the decline in self-esteem exhibited by depressed individuals, and the attributional processes that take place in a situation of helplessness. When a person perceives the noncontingency between behavior and consequences, he/she will wonder about the cause; the nature of the attributional processes that are carried out will determine whether or not the person will maintain expectations of future noncontingencies. Weiner's (1985) attributional theory may help delineate the path of depression by adding the factor of the low motivation to succeed (i.e., hopelessness), whereas for Abramson et al. (1978) it is the lack of contingency between results and behavior (i.e., helplessness). According to Weiner's theory, the causes of failures are attributed to internal stable factors, though on occasion it is attributed to external stable causes.

When considering the cognitive model of depression espoused by Beck (1967) and the learned helplessness model of depression reformulated by Abramson et al. (1978), it is apparent that when extrapolating to children a theoretical framework is needed that includes social influences and a psychological self-perspective. Self-efficacy is an integrative model of cognitive behavior that grew out of social learning theory in the late 1970s. It provides a framework for understanding the cognitive-mediational aspects of behavior (Bandura, 1997; Conyers, Enright, & Strauser, 1998; Perry, 1996). Social learning theory (SLT) emphasizes behavior more than cognition, especially the influence of significant others in modeling and reinforcing health behaviors. Social learning theory



further emphasizes environmental cues, learned expectancies including the values placed on behaviors or their consequences, the internalization of reward systems, and behavioral capabilities without which health behaviors cannot be learned. Therefore, successful behavioral change cannot be achieved by only focusing on cognitive aspects.

Interventions that solely focus on cognitive aspects can provide individuals with the knowledge and awareness of skills and abilities needed to execute a behavior. However, if the individual does not believe that he/she can actually execute the behavior, the behavior will not occur (Bandura, 1977; Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Mufson & Moreau, 1997). Furthermore, if negative self-evaluation continues, it may lead to depression, feelings of worthlessness, and lack of purposefulness (Bandura, 1986).

Children and adolescents manage major biological, educational, and social role transitions concurrently. Perceived inefficacy in academic activities, interpersonal relations, and self-regulation leads to the inability to resist peer pressure and engage in potentially risky activities. These negative perceptions reduce pro-social behavior, which, in turn, increases a vulnerability to depression (Bandura, 1997; Lewinsohn et al., 1990; Lewinsohn et al., 1994). Helping children to attain adaptive social functioning when dealing with stage-prominent issues (e.g., interpersonal relationships, school performance) is likely to be beneficial in beginning to reorganize and rework prior developmental incompetencies (Cicchetti & Toth, 1998).

Bandura (1986) reported that a comprehensive theory of depression must be concerned not only with the perceived causes of failures but also with the internal standards by which attainments will be self-judged as successes or as failures to begin

with. Depressive reactions often arise from stringent standards of self-evaluation that make otherwise objective successes seem to be personal failures. According to Bandura (1986, 1997), depressed individuals often display realistic self-appraisals of their social competence. On the other hand, nondepressed individuals see themselves as much more skillful than they really are. This low sense of efficacy to attain the things in life that bring self-satisfaction and self-worth breeds depression, and depression, in turn, diminishes belief in one's personal efficacy.

A different path to depression is through a low sense of social efficacy to develop interpersonal relationships that provide models of coping competency, buffer the adverse effects of chronic stressors, and bring satisfaction to people's lives. Bandura (1997) reported that it is now known that socially supportive relationships reduce vulnerability to stress, depression, and physical illness. Individuals are spared depression not by an optimistic disposition but because of a belief in their abilities to master events that happen to them, which leads to an optimistic outlook on future outcomes (Bandura, 1977). It is this failure (i.e., not acquiring appropriate social skills) that is the common source of depression, leading us to the relationship between depression and social skills.

Deficits in social skills are thought to underlie depression by leading to reduced social interactions and reduced reinforcement from the environment (Dujovne, Barnard, & Rapoff, 1995). This is consistent with Lewinsohn and colleagues' (1990) hypothesis that the total amount of response-contingent positive reinforcement an individual receives is a function of the extent to which the individual has the skills and emits the behaviors that will elicit reinforcement from the environment.

Research has shown depression in children to be related to numerous deficiencies in social functioning and social competence (Black-Cecchini, 1997; Cole, Martin, Powers, & Truglio, 1996; Elias & Branden, 1988; Gresham & Reschly, 1987; Herman-Stahl & Petersen, 1996; Lefkowitz & Tesiny, 1980; Merrel & Gimpel, 1998; Quiggle, Garber, Panak, & Dodge, 1992; Ralph & Nicholson, 1995). Although it is a behavioral intervention, social skills training is often included as a component in cognitive-behavioral treatments.

The goal of social skills training is to increase the child's ability to obtain reinforcement from others in the form of increased and more rewarding interactions (Merrell, 1994). Several components are involved in social skills training, including direct instructions, modeling by the therapist, role-playing of interpersonal vignettes with the therapist or peers, performance feedback and praise based on the child's response to the role-played vignette, planned activities, and social as well as tangible reinforcement (Dujovne et al., 1995). Dujovne et al. reported that in single-subject experiments with inpatient children with a wide range of psychological problems, specific depressive behaviors, such as body position and lack of eye contact, have been targeted and treated using behavioral social skills training.

There have been attempts by researchers to demonstrate a link between depression and social skills and/or competence. For example, Quiggle et al. (1992) studied 220 depressed and nondepressed children and found that depressed children were more likely to report that engaging in assertive behavior would result in fewer positive and more negative outcomes, and showed a trend toward generating fewer assertive responses,



reporting that they would be less likely to use assertive responses, and would find assertion less easy. Also, the researchers found that depressed children did tend to evaluate withdrawal more favorably and to expect that withdrawal would lead to more positive outcomes. Overall findings suggest that depressed children viewed assertiveness less favorably and showed a tendency toward favoring withdrawal. Depressed children appear to have different, less competent ways of responding to negative interpersonal and achievement situations.

In summary, the models presented help conceptualize the different possible psychological experiences for children who may have become depressed. These theories propose different relationships between casual attributions, motivation in regard to social settings, self-esteem, and depression. Those that appear to have the greatest support in the research are theories that propose as children's social competence increases, they are at a decreased risk for developing depressive symptomatology.

### Risk Factors for Depression

The essential features of depression are the same in children as in adults, although children exhibit the symptoms differently. Unlike adults, children may not have the vocabulary to accurately describe how they feel and therefore may express their problems through behavior. The following risk factors may be associated with depression in adolescents: socioeconomic factors, family relationships, family history, and suicide.

Low socioeconomic status (SES) has been correlated with adult depressive symptoms and, more recently, with depressive symptoms in children (Mufson & Moreau,

1997). For instance, Kaplan, Hong, and Weinhold (1984), in a study of high school students from diverse socioeconomic classes, found that lower SES children had higher total Beck Depression Inventory (Beck & Steer, 1987) scores than those children from higher SES.

The loss of a parent and quality of family relationships have been associated with increased rates of depressive symptoms or major depression in children (Mufson & Moreau, 1997). Fendrich, Warner, and Weissman (1990), in a study of children at risk for psychiatric illness by virtue of major depression in one of the parents, found that those children reporting low family cohesion and affectionless control (punitive, nonsupportive control) had higher rates of major depression than those reporting more cohesive and warmer family relations. Often teenagers react to the pain of depression by getting into trouble: trouble with alcohol, drugs, or sex; trouble with school or bad grades; problems with family or friends (Brown, 1996). In recent history it was suggested that depression in children was "masked" by such symptoms as aggressiveness, tantrums, and anxiety rather than such core symptoms as dysphoric mood and loss of interest (Kazdin, 1990). Currently, it is no longer believed that "masked" depression is a unique indicator for symptoms of depression in children, but that there may also be comorbid problems (Crowley, Ferguson, & Van Dusen, 1998). Comorbidity is common in depressed children and adolescents. Disorders associated (comorbid) with major depression in children may include attention deficit disorder, anxiety disorders, conduct disorders, and eating disorders (Mufson & Moreau, 1997). According to Cecchetti and Toth (1998), 40-70% of depressed children have a comorbid disorder. They reported that most frequently the

comorbid diagnoses include dysthymia, anxiety disorder, disruptive disorder, and substance abuse.

Children of parents who are themselves depressed have been shown to be at heightened risk for developing depression, as well as other psychological disorders. High rates of parental stress and family conflict have been found to be associated with childhood depression as well (Merrell, 1994). There is evidence that the earlier the age of onset of depression in the child or adolescent, the greater the possibility of depression in the relative (Mufson & Moreau, 1997; Weissman et al., 1987). Weissman et al. (1987) found that children of depressed parents, compared with children of never mentally ill parents, are at threefold increased risk to develop school problems and suicidal behavior.

On the basis of the literature for adult suicide and depression, there are four critical features that may be extrapolated to childhood suicide and depression. First, depressed adults have been found to engage in fewer activities and enjoy these activities less. Secondly, poor interpersonal problem-solving ability has been demonstrated. Third, depressed adults have been found to have dysfunctional attributional styles, characterized by blaming oneself for negative events and by seeing such events as ever present and as touching every area of one's life. Lastly, depressed adults habitually self-blame, engage in catastrophic thinking regarding the consequences of their actions, are illogical in their self-instructions, and exaggerate and overgeneralize negatives (Cole, 1989; Neligh, 1988; Rotheram-Borus, Trautman, Dopkins, & Shrout, 1990).

While the interpretation of the relationship between suicide and depression among children and adolescents is complicated by a number of issues, there is none more

important than comorbidity of other disorders of childhood (e.g., externalizing and internalizing disorders; Cole, 1989). Research shows that almost all people who kill themselves have a diagnosable mental or substance abuse disorder or both, and that the majority have depressive illness (Forman & Kalafat, 1998). Also, studies indicate that the most promising way to prevent suicide and suicidal behavior is through the early recognition and treatment of depression and other psychiatric illnesses (National Institute of Mental Health, 1998).

Children and adolescents should be regarded as high risk if they have indicated suicidal ideation within the last 3 months, if they have ever made a prior suicide attempt, or if they indicate severe mood problems, or substance abuse (Brown, 1996). Many research efforts are underway to better diagnose, identify, treat, and/or prevent mood disorders in children and adolescents who are at risk. By studying high-risk populations researchers hope to learn more about the onset and course of childhood depression and its correlates, such as suicide.

In summary, little research exists on child suicide attempters that is helpful to clinicians designing interventions. Treatment of children has been based on empirical research with adults. Suicidal adults are often depressed, and interventions for suicidal children have paralleled those for depressed adults. The literature on suicide is scarce and the literature that does exist utilizes information from research on adults (Rotheram-Borus et al., 1990).

### Correlates of Depression

It has been shown that deficits and distortions of cognitive processes have been found in several studies of depressed children and adolescents (e.g., Mullins, Siegel, & Hodges, 1985). Some cognitive processes are encompassed by the central or core features of depression (e.g., feelings of worthlessness), and hence are not properly regarded as associated features (Kazdin & Marciano, 1998). Yet a broad range of cognitions has been identified that is well outside the diagnostic criteria that characterizes depressed children; these include various manifestations of negative beliefs, attributions of failure, and external locus of control.

Also, problems with interpersonal relationships are common among depressed children and adolescents, including deficiencies in skills of social functioning (e.g., making friends, conversing), deficits in interpersonal problem-solving skills related to social behavior, and poor peer relations (e.g., lower popularity, greater rejection; Altmann & Gotlib, 1988). Depressed youths are more likely to isolate themselves (e.g., play alone, engage in fewer social activities), which may lead to decreased opportunities for reinforcement from the environment (Altmann & Gotlib, 1988; Shah & Morgan, 1996).

Depressed children are also likely to show academic dysfunction, as reflected in poor academic performance and lower levels of grade attainment (Kazdin & Marciano, 1998). Deficits in academic competence have been implicated both as a cause and as a consequence of childhood depression. Cole et al. (1996) reported that if children receive aversive feedback from multiple sources across multiple domains, they become cognitively

cornered into adopting relatively global, negative views of themselves. Such negative self-perceptions place the child at risk for low self-esteem and possibly depression.

### Relationship Between Depression and Social Skills

Some children experience adjustment problems during times of transition and life stress, while others adapt successfully. Coping efforts appear to moderate the effects of negative life events on psychological well-being, and certain styles of coping (e.g., social skills) are linked to better adaptation (Herman-Stahl & Petersen, 1996)

Shah and Morgan (1996) reported that previous studies attempting to relate depressive symptoms to social competence have used one of two approaches: asking subjects reporting high levels of depressive symptoms to describe their own social competence; or asking peers, teachers, or significant others to rate the social competence of subjects reporting high levels of depressive symptoms. Findings from Shah and Morgan's study suggested that children who receive high scores on self-ratings of depression not only perceive themselves as being less socially competent, but also tend to be neglected or rejected by their peers. Moreover, teachers perceived those depressed children as having lower social competence and displaying more behavior problems than their peers. Hence, a generally negative picture emerges for the child reporting lower levels of social competence and high levels of depressive symptoms.

According to Van Hasselt et al. (1993), among their sample of children ( $M$  age = 15.3,  $SD$  = 1.7) statistically significant associations were found between social functioning and levels of depression ( $r$  = -.42), hopelessness ( $r$  = -.30), and self-esteem



( $r = -.45$ ). Specifically, greater submissiveness, less assertiveness, and increased feelings of social dissatisfaction were related to higher ratings of depression. Other studies examining factors (e.g., social skills, assertiveness, academic performance, and depression) with children also have corroborated this relationship. For example, Helsel and Matson (1984) found a statistically significant correspondence between social skills and depression in normal school children. Similarly, an investigation by Strauss, Forehand, Frame, and Smith (1984) indicated that self-reported assertion differentiated samples of depressed and nondepressed children selected from a nonclinical population.

Cole et al. (1996) investigated the relationship between academic and social competence and depression. Utilizing multimethod data collection (i.e., self-report, peer nomination, teacher and parent report measures, 12 measures in all) and a longitudinal study, the researchers reported findings on a sample of third graders ( $n = 490$ ) and sixth graders ( $n = 455$ ) from a Midwestern school district. They reported that depression correlated strongly with academic competence ( $r$  ranging from  $-.53$  to  $-.69$ ) in both third and sixth graders. However, the correlation between depression and social competence was even stronger ( $r$  ranging from  $-.74$  to  $-.81$ ), especially in the sixth grade. In their sixth-grade sample, the authors found evidence consistent with a social competence deficit model of child depression, specifically that social competence was significantly negatively related to depression. These findings are consistent with the position that social skills deficits put children at risk for subsequent depression. Also the hypothesis that children's fundamental level of social or academic competence deteriorates because of depression was not supported by their research.



In a more recent study, Crowley et al. (1998) sought to better understand the relationship between depression and social skills deficits. The sample included fifth graders ( $n = 46$ ) from a rural western school district, utilizing pre- and posttest data collection and multiple measures. Using a cross-lagged panel analysis, the researchers sought to discern to what degree depression leads to poor social skills or vice versa. Their findings support that depression and social skills have a negative relationship, as previously reported in the literature, and that social skills deficits are more likely to be a "cause" of depression. Crowley et al. reported that the results offer support to Bandura's self-efficacy theory, but suggest that other factors may be implicated in the connection between social skills and depression. It is hoped that by identifying the most vulnerable individuals and providing them with treatment, we may start to see a decline in prevalence rates of depression for children and adolescents.

In a study by Black-Cecchini (1997), the researcher conducted an intervention study investigating, in part, the relationship between social skill deficits and depressive symptomatology. The study involved a treatment phase, used control group comparisons, and included multiple sources and methods of data collection. The author's findings were consistent with previous research on the relationship between depressive symptomatology and social skills, reporting a negative relationship between self-reported depressive measures and social skills (Black-Cecchini, 1997). The magnitude of the relationship varied from  $-.05$  to  $-.22$ . The negative correlations indicate that as social skills increase, depression ratings decrease and vice versa.

The relationship between social skills and depression suggests that social skills may be an important part of effective treatment for children with increased levels of depression. Therefore, the social skills models provide some optimism for primary prevention efforts. The recognition and treatment of depression is likely to increase if an effort is made to educate the community, and investigate and document efficacy of treatments for this population. Because exogenous factors are involved in child and adolescent depression, psychosocial treatments are likely to have their place as effective treatments (Mufson & Moreau, 1997).

#### Treatment of Childhood Depression

The overall efficacy of treatments for depression in children remains questionable because the bulk of existing reviews of the child depression treatment literature are narrative in nature, methodologically flawed, and/or present vague or conflicting conclusions (Michael & Crowley, 1998). Also, literature on the intervention research on childhood mood disorders has lagged behind the literature of both other childhood disorders and adult depression (Kaslow & Thompson, 1998).

Kaslow and Thompson (1998) conducted a meta-analytic review of the psychosocial treatment outcome studies for depressed children and reported that regardless of the treatment modality, psychosocial interventions are effective at posttreatment and follow-up. The researchers reported results of two studies they found to be efficacious (Stark, Reynolds, & Kaslow, 1987; Stark, Rouse, & Livingston, 1991). The first study (Stark et al., 1987) was a 12-session group intervention including self-

control therapy, behavior problem-solving therapy, and a wait-list control for fourth through sixth graders with elevated depression scores (Child Depression Inventory [CDI]). Postintervention within-group analyses indicated that those in both active interventions reported fewer symptoms of depression and anxiety, whereas wait-list children reported minimal change (Kaslow & Thompson, 1998). The second study (Stark et al., 1991) evaluated an expanded version of self-control therapy for children who reported high levels of depressive symptoms. The intervention used was a 24- to 26-session cognitive-behavioral treatment, consisting of self-control and social skills training, assertiveness training, relaxation and imagery training, and cognitive restructuring. The researchers reported that postintervention and 7-month follow-up assessments indicated decreases in self-reported depressive symptoms for both groups of children.

In a recent meta-analytic review, Michael and Crowley (1998) reported on 22 outcome studies that targeted child and adolescent depression over the last two decades. The researchers sought to estimate the overall effectiveness of psychological treatments for depressed children. Excluded from their review were case reports and single-subject designs. Fourteen of the 22 outcome studies were controlled outcome studies with wait-list, placebo, alternative, and/or no-treatment control group. The other eight studies implemented pretreatment-posttreatment design. Also 14 studies included follow-up data, with a range of 4 weeks to 2 years posttreatment (Michael & Crowley, 1998). The researchers reported results that indicated both individual and group interventions were effective in ameliorating depressive symptomatology, based on self-report measures, with

an average standard mean difference effect size (SMDES) of .88. Furthermore, various treatments were found to be effective.

Currently, there is no definitive treatment for the spectrum of mood disorders in children, although some researchers believe that children respond well to treatment because they readily adapt and their symptoms are not yet entrenched (Brown, 1996). It is important for children suffering from depression to receive prompt treatment because early onset places children at a greater risk for multiple episodes of depression throughout their life span.

#### Prevalence Rates of Childhood Depression

A general description of prevalence rates of childhood depression will be presented in this section. However, due to the differences in instrumentation, sampling techniques, diagnostic procedures, and population samples, there is a great deal of variation in the prevalence estimates (Michael, 1997).

Many researchers believe that mood disorders in children and adolescents represent one of the most underdiagnosed group of illnesses in psychology (Ralph & Nicholson, 1995). This may be due to several factors: (a) children are not always able to express how they feel; (b) the symptoms of mood disorders take on different forms in children than in adults, yet they are all diagnosed with the DSM-IV (APA, 1994) diagnoses; (c) mood disorders are often accompanied by other psychological disorders which can overshadow depressive symptoms (e.g., conduct disorder); and (d) many mental health professional and physicians tend to think of depression as an illness of

adulthood (Brown, 1996). Not surprisingly, it was only in the 1980s that mood disorders in children were included in the category of diagnosed psychiatric illnesses.

Early epidemiological studies focused on depressive symptoms, while more recent studies have reported on depressive disorders. There is great variability in reports of prevalence rates of childhood depression due to variable diagnostic criteria, multiple populations (clinical vs. community populations), different methods to obtain information (self-report, questionnaires vs. structured interviews), and varying informants (parents, teachers, and/or children). Thus, comparisons among studies are difficult. Depressive symptoms are common in prepubertal children, whereas depressive disorders are more commonly found in adolescents both in epidemiological samples and clinical populations (Mufson & Moreau, 1997).

The prevalence rate of childhood depression varies according to how depression is conceptualized. As a syndrome, the prevalence rate of depression has been reported to range from 2.9-12% of the adolescent students in regular school settings (Brent et al., 1996; Reynolds, 1990). In more recent studies, estimates of the prevalence of child and adolescent depression among the general population range from 0.4-8% (Cicchetti & Toth, 1998; Kazdin & Marciano, 1998; Michael & Crowley, 1998; Mufson & Moreau, 1997). According to Brown (1996), 7-14% of children will experience an episode of major depression before the age of 15.

In summary, depression in children and adolescents appears much more common than was first suspected. Historically, childhood depression has been thought to be a normal part of childhood development rather than a disturbance. With a prevalence rate

similar to adults and the recent interest in childhood depression, indications are that acceptance of its existence as a syndrome beyond normally occurring isolated symptoms is widespread. And given the high prevalence rates, this is a problem area that obviously needs much more attention.

### Prevention and Follow-Up: A Comparison

The application of prevention programs dealing with internalizing disorders, specifically depression, has been slow at best. Follow-up is key to understanding the course and/or duration of internalizing disorders. With the ultimate goal of prevention research being the reduction of new cases of clinical episodes of depression, a review of specific areas that have an extensive history in prevention research will be reviewed. These are areas where prevention follow-up efforts have been stronger, and thus have provided more information concerning the limitations and expectations of prevention programs. A discussion of follow-up studies in the area of drug and alcohol intervention lends insight to the development of a model for future research in childhood depression. An examination of follow-up studies in the area of drug/alcohol treatment and prevention programs (e.g., psychometrics) can be useful in understanding the development and treatment of childhood depression.

#### Drug/Alcohol Prevention Programs

One area with considerable research in prevention, and one that has been evolving rapidly over the past decade, is the use of social competency programs to reduce drug



abuse in youth. These social competency programs were derived from social learning theory and were based on the premise that deficiencies in psycho-social skills in youth contribute to vulnerability to substance abuse. Gross and McCaul (1992) proposed that an intervention that teaches problem solving and improves generic competency skills should serve to improve resistance skills and reduce vulnerability to drug use. The authors further hypothesized that a socially supportive, psychoeducational group intervention directed at enhancing social skills, social support, and knowledge of addiction would serve to increase self-esteem, decrease depression and other intrapersonal problem behaviors, and delay or deter drug use. However, while utilization of skills interventions with substance abusers appears to have considerable face validity, empirical evidence documenting the extent and nature of social skills deficiencies in this population is surprisingly scarce.

#### Drug Abuse Resistance Education

Drug Abuse Resistance Education (DARE) is the most widely used school-based drug use prevention program in the United States (Ennett et al., 1994). DARE is a drug abuse prevention program that focuses on teaching students skills for recognizing and resisting social pressures to use drugs. Lessons also focus on the development of self-esteem, coping, assertiveness, communication skills, risk assessment and decision-making skills, and the identification of positive alternatives to drug use (Harmon, 1993). Taught by a uniformed police officer, the program consists of 17 lessons offered once a week for 45-50 minutes. The DARE curriculum can be taught only by police officers who attend an



an intensive 2-week, 80-hour training. The DARE program calls for a wide range of teaching activities including question and answer sessions, group discussion, role play, and workbook exercises. Thus DARE is one of the most comprehensively researched areas focusing on children and adolescents and has much to tell us about intervention effectiveness.

Several evaluations of DARE have been conducted over the past decade. Some show positive results, some show negative results, some show mixed results, and most have serious methodological flaws. Methodological flaws in the evaluation studies conducted include some of the following concerns: no control groups, small sample sizes, posttest only, poorly operationalized measures, no statistical tests performed, and pretreatment differences not taken into account (Ennett et al., 1994). Furthermore, in early DARE evaluations "success" was defined by students' response to liking the program or reports from parents and teachers that DARE was "useful" or "valuable" (Harmon, 1993). However, several methodologically sound studies have been conducted. In Harmon's study of the effectiveness of the DARE program, the researcher sought to improve the study methodologically by including pre- and posttest, having larger sample size, and providing a control group. The evidence showed the DARE students had more beliefs in prosocial norms, more attitudes against substance use, more assertiveness, and more positive peer associations than the comparison group. The DARE students also reported less association with drug-using peers and less alcohol use than in the previous year. However, the DARE students were equivalent to the non-DARE students on social

integration, commitment and attachment to school, rebellious behavior, coping strategies, attitudes about the police, self-esteem, and last-year and last-month drug use.

Becker, Agopian, and Yeh (1992) conducted a study evaluating the impact of DARE in the Long Beach, California, school district. Their experimental and control groups consisted of approximately 3,000 fifth-grade students. A 34-item self-report questionnaire was utilized to collect data from students during the fall semester. Approximately half the students received DARE instruction during the semester, and the other half of the fifth-grade class did not receive DARE instruction. The results showed DARE was most effective in maintaining current levels of substance use, suggesting that the program slows or maintains current drug use levels. Also, DARE students did not experiment with new illicit substances, as compared with the control group students. Unfortunately, DARE was unable to prevent a broad variety of substance use by students, for example, the use of cigarettes, alcohol, and inhalants.

In a study by Dukes, Ullman, and Stein (1996), the long-term effects of DARE were inconsistent for students and benefits to the experimental group "wore off" (i.e., the benefits to the experimental group were not permanent, and were not maintained over time), indicating that perhaps DARE should be extended beyond the prescribed single semester in which it is offered. Their sample included 561 ninth graders in the experimental group and 353 ninth graders in the control group, across a total of 38 different schools. The researchers' results showed no statistically significant differences between students in the DARE group and students in the control group on variables such as self-esteem, polydrug use, delay of onset of experimentation, police and family bonds,

resistance to peer pressure, and prodrug-use attitude. According to Harmon (1993), it may have been meaningful to extend the length and intensity of the prevention program to encompass more broad-based adolescent life problems (e.g., social skills, interpersonal relationships, and effective communication), in order to target many areas of an individual's life. The importance of follow-up data is paramount in determining the magnitude and direction of sustained differences. Longitudinal data could clarify whether or not the intensity of the intervention was sufficient enough to allow implementation of the newly acquired skills or whether the differences between two groups over time may have diminished, thereby minimizing the effect or sustained impact of the prevention program.

Regardless of the difficulties noted, prevention still holds more promise for controlling adolescent drug use than supply reduction or treatment (Harmon, 1993). Because drug use often begins at such an early age, prevention programs must target youths before they come in contact with drugs. The recognition of the link between adult health problems and childhood and adolescent behaviors has given new emphasis and urgency to prevention and health promotion programs for children that affect everyday behaviors, rather than traditional health education programs that merely impart information. Research has consistently reached pessimistic conclusions about the effectiveness of prevention directed at alcohol and drug abuse in children (Goodstadt, 1996).

From the review of the effectiveness of DARE, these findings, generally, suggest that the long-term effects of DARE were not uniform for students. Other general

statements related to DARE are that DARE appeared most effective in maintaining current levels of substance use and students who received DARE did not experiment with new illicit substances, when compared to control groups. DARE did not appear to have an impact on preventing a broad variety of substance use by students (e.g., the use of cigarettes, alcohol, and inhalants). Becker et al. (1992) also reported that the benefits of DARE curriculum are challenged daily by the media, role modeling by parents, and a general social approval of various substances. Therefore, DARE must involve the students' broader social interactions with their families and communities.

The area of follow-up on childhood problems (e.g., drug use and depression) does not have a solid foundation of support to determine the efficacy of the primary prevention programs. Therefore the need is great for such longitudinal research to identify the main variables working in these problem areas. Depression is potentially important because of the problems already noted, as well as it may be key as a causal force in other problems (e.g., drug/alcohol abuse). In general, the findings from DARE research strengthen the need for more methodologically sound longitudinal studies on the efficacy of primary prevention programs.

In summary, based on the research of DARE programs, the scope of a depression prevention program may prove beneficial by expanding to cover more areas of a child's life (e.g., social skills). It also might be possible that prevention programs reduce levels of depression in children. However, because of the narrow focus of prevention (i.e., the prevention of depression), these prevention programs may only allow minimal change for target populations.

### Prevention of Depression

As previously stated, early prevention of depression in children is important because having an episode of clinical depression during childhood substantially increases the risk for future episodes (e.g., Kovacs, Feinberg, Crouse-Novack, Paulauskas, & Kinkelstein, 1984). Thus, the prevention of depression early in life may sever the often observed and debilitating pattern of multiple or life-long episodes of depressive disorder (Clarke et al., 1993). In spite of the proliferation of programs aimed at the prevention of depression and related problems, there is lack of information about their long-term effectiveness (1- and 3-year follow-up) and a limited number of prevention programs as compared to intervention programs (e.g., Black-Cecchini, 1997; Brent et al., 1996; Clarke et al. 1993; Cole et al., 1996; Elias & Branden, 1988; Levy & Land, 1994; Lewinsohn et al., 1990; Tarnowski et al., 1992). As such, schools are a logical place in which mental health services should be delivered to children who may not otherwise have access to such services. School systems are the only social institutions that provide universal services to children in this country. Therefore, school systems are in a unique position to provide interventions to help depressed children.

### School-Based Prevention of Depression

There are only two published studies and one unpublished study that have been conducted with the goal of primary prevention of depression in children. Clarke et al. (1993) reported on the efficacy of two relatively low-intensity primary prevention studies for adolescent depressive symptomatology in a high school sample of 9th- and 10th-grade

students, unselected for elevated risk of depressive disorder. The first of these school-based interventions was a three-session, relatively nonintrusive educational intervention. The second was a five-session behavioral skills training intervention in which adolescents were trained to increase pleasant activities in order to prevent depressive symptomatology (Clarke et al., 1993).

In the first study, an educational intervention, all 9th- and 10th-grade adolescents enrolled in 25 mandatory health classes in two suburban high schools and one middle school were randomly assigned by health classes to either the active primary prevention condition or to the control condition. The preventive curriculum consisted of three structured lectures and two 20-minute videotapes covering the symptoms, causes, and treatments of depression. Clarke et al. (1993) compared experimental and control groups at the first and last intervention sessions, and at the 12-week follow-up. The effect sizes on the measured scores of the Center for Epidemiological Studies--Depression Scale (CES-D) were .18 for boys and -.10 for girls comparing pretest and posttest scores. For girls, there was no statistically significant difference for the experimental condition, no statistically significant difference for time (i.e., change in mean CES-D scores over time), but also no significant group-by-time interaction, indicating an absence of any statistically significant effect for the intervention over time. For boys, there was no statistically significant difference for the experimental condition, but similar to girls, there was a statistically significant difference between depression scores from pretest to posttest. There was a trend in the predicted direction for the boys' group-by-time interaction. However, by the 12-week follow-up, all differences between experimental and control



conditions had disappeared, suggesting that the effects of the primary preventive intervention were short-lived, at least as assessed by self-reported depressive symptomatology (Clarke et al., 1993).

In the second study, a behavioral skill-training intervention, all 9th- and 10<sup>th</sup>-grade adolescents enrolled in 14 mandatory health classes in the same schools that had participated in Study 1 were randomly assigned by health classes to either the active primary prevention condition or to the control condition. Adolescents in the experimental condition were exposed to five consecutive 50-minute sessions. The first session consisted of an abbreviated introductory lecture and one 20-minute videotape addressing the symptoms, causes, and treatments of depression. The subsequent four sessions presented a behavioral intervention for depression (e.g., increase daily rate of pleasant activities). The second study produced effect sizes of .06 for boys and -.01 for girls on reduction of depressive symptoms measured by CES-D. For girls, there was no statistically significant difference for experimental condition, a statistically significant difference for time (between sessions 1 and 5), but no significant group-by-time interaction, indicating an absence of any effect for the intervention over time. For boys there was no statistically significant difference for time or experimental condition, nor was there a statistically significant group-by-time interaction. At the 12-week follow-up there were no statistically significant differences that could be attributed to the intervention.

Altogether, the results of these two investigations suggest that the short-term, psycho-educational primary prevention of adolescent self-reported depression is not effective, even when training is provided in behavioral skills hypothesized to be a risk

factor for depression (Clarke et al., 1993). Knowledge acquisition may have been beneficial to students, but it was not assessed.

Key to Clarke and others' (1993) studies is that these were the only efforts to try and understand the long-term effects of preventions focusing on childhood depression, however several limitations must be noted. A limitation of both studies was a reliance on a single instrument, the Center for Epidemiological Studies-Depression Scale (CES-D), as the primary dependent measure, confining conclusions to statements about the prevention of depressive symptomatology to a single diagnostic measure and a single reporting source (Clarke et al., 1993). Also the behavioral intervention may have targeted the correct skills, but the program may have been poorly executed or otherwise insufficient to successfully teach the required protective skills. The program may not have been long enough to allow retention of skills and not allowed the opportunity to practice the newly acquired skills. Another possible limitation reported by the authors was the presence of "attenuation effects." The attenuation effect has been noted in many investigations that rely on multiple administrations of self-report instruments, and is manifested as substantial declines in subject scores over time, even in the absence of any intervention (i.e., the reported changes in depression scores across intervention sessions).

Black-Cecchini (1997) examined the effects of a school-based intervention that had both a cognitive-behavioral and interpersonal focus and followed a primary prevention model. The researcher focused on determining the effectiveness of a school-based, primary prevention model on social skills and depressive symptomatology. The researcher also utilized multiple sources and instruments for data collection. For self-report data the

Reynolds Childhood Depression Scale (RCDS; Reynolds, 1989) was selected, along with the Social Skills Rating System (SSRS; Gresham & Elliott, 1990). For teacher ratings, the Systematic Screening for Behavior Disorders (SSBD; Walker & Severson, 1992) and the School Social Behavior Scales (SSBS; Merrell, 1993) were the instruments of choice. For peer-report data the Peer Nomination Inventory for Depression (PNID; Lefkowitz & Tesiny, 1980) was utilized. The theory behind this study was based on the relationship between social skills and depression, that is, deficits in social skills do not allow social interaction resulting in depressive symptomatology. The sample included approximately 110 nonreferred fifth- grade students from a school district in Northern Utah.

Black-Cecchini (1997) tested several hypotheses, including assessing for statistically significant and differential changes between the intervention and control groups on measures of social skills and depressive symptomatology. Also the pre- and postintervention relationships between social skills level and depression were investigated. In the first hypothesis, changes in social skills level, results showed moderate effect sizes on a self-report social skills measure, the SSRS (Gresham & Elliott, 1990) between intervention and control groups at posttest. The SSRS has four subscales and the effect sizes were as follows: assertion = .51; self-control = .48; cooperation = .38, and empathy = -.06. The data indicated that the treatment appeared to have an effect of increasing self-reported social skills in those students who participated in the intervention groups, as opposed to control group students (Black-Cecchini, 1997), particularly in the areas of assertion and self-control.

Black-Cecchini (1997) addressed two other research questions. First, she investigated the interaction between pretest and treatment and found no statistically significant pretest effect for any of the examined subscale scores and no statistical significant interactions between the pretest and intervention conditions. In examining the preintervention relationship between depressive symptomatology and social skills level, a negative relationship was reported between self-reported depression and social skills, a finding consistent with previous research. Black-Cecchini's (1997) final research question looked at the postrelationship between depression and social skills scores. Again, a negative relationship was reported between self-reported depressive symptomatology (RCDS) and all four subscales of the SSRS. The magnitude of the relationship varied from  $-.05$  to  $-.22$ . The negative correlations indicate that as social skills increase, depression ratings decrease.

Altogether, the results of Black-Cecchini's investigation suggested that the primary intervention did not appear to have a remarkable effect on depressive symptomatology. An important strength of this study was that unlike previous preventive studies where only a single instrument was utilized, several different instruments were employed to assess depressive symptomatology (e.g., Clarke et al., 1993). A possible weakness of this study was that it included students with a normal to low range of depression scores prior to the intervention (pretest), although this would be expected with a primary prevention study. Also, no follow-up data were collected, which would have contributed greatly to determining the impact over time of the primary prevention model (Black-Cecchini, 1997). Follow-up would be particularly important based on the theory that if changes in social

skills will result in changes in depression, then we would not expect those changes to show up yet. In particular, longitudinal research is needed to explicate patterns and sequences of social maladjustment and internalizing disorders (i.e., depression). The present follow-up study was an attempt to determine if a social/interpersonal and cognitive-behavioral intervention produced behavioral and knowledge benefits for children.

### Summary

In summary, depression in children and adolescents appears much more common than was originally estimated. Currently, there has been an increase in the investigation of childhood depression, due in part to the extrapolation of conceptual views, assessment approaches, and laboratory techniques from the study of adult to the study of childhood depression (Kazdin, 1990). Many research efforts are underway to better diagnose, identify, and treat the children and adolescents who are at risk for mood disorders. Through the description of the depressive symptoms, it may become apparent that depression is a serious disorder that has a broad impact on a child's life. When one considers the gravity of the disruption in a child's life that results from an episode of depression, it would seem as though the length of the episode may, in part, mediate both the short- and long-term impact of the syndrome on the child's psychosocial well-being. The longer the duration of the episode, the more pervasive the impact. Evidence suggests that episodes of depression are both long-lasting and recurrent (Stark, 1990).

Therefore, the need is great for longitudinal research aimed at mediating factors such as measurement issues, content of interventions, intensity of treatment, and various issues yet to be identified (Black-Cecchini, 1997). The present follow-up study sought to report the efficacy of a primary prevention program aimed at the relationship between social skills and depression one year after the completion of the intervention. It also involved the use of control group comparison, multiple sources, and methods of data collection.

According to Bandura (1977; Bandura et al., 1999), self-efficacy theory is based on the principle that cognitive events are induced and altered by the experience of effective performance. Depressive reactions often arise from rigorous rules of self-evaluation that make otherwise objective successes seem to be personal failures. When the capabilities of the individual merge with standards of performance, the person may feel efficacious, but if not, then the performance may become difficult. People plagued with depression perceive their self-efficacy as falling short of their minimal standards of personal value, whereas for the nondepressed their perceived self-efficacy corresponds more closely to their rules (Bandura, 1986). Therefore, there appears to be a strong link between social skills and childhood depression. Merrell and Gimpel (1998) reported that the use of social skills training with depressed children has appeared to focus more on alleviating the depressive symptoms than on increasing social skills.

As stated previously the prevention of childhood depression is paramount because of the debilitating effects on the whole child (Black-Cecchini, 1997; Cicchetti & Toth, 1998; Merrell & Gimpel, 1998). Follow-up studies are key because children are



constantly developing during this time of their lives and these developmental changes (e.g., puberty, interpersonal skills, social skills or lack of) may be a major causal factor in the development of childhood depression.

### CHAPTER III

### METHODOLOGY

#### Participants

The participants of this study consisted of approximately 86 nonreferred sixth-grade students from a rural district in Northern Utah. The original sample consisted of 110 nonreferred fifth graders from four Box Elder County elementary schools. Thus, the present sample consists of 81% of the original study. The students were between the ages 11-12, with the mean age of 11.70 years ( $SD = .46$ ). Parents of all students in participating classrooms were notified by letter informing them of the modification to their child's regular Healthy Lifestyles curriculum. They were informed about the assessment procedures and the possibility that their child may be selected for the intervention program. Parents were instructed to return an enclosed Waiver of Consent form if they did not want their child to participate in the assessment procedures or the modified curriculum (Black-Cecchini, 1997). In this letter, the parents were also informed that at 1 year after the completion of the intervention, follow-up data would be collected. Prior to the beginning of the study, it was reviewed and approved by the Utah State University Institutional Review Board (see Appendix A).

#### Study Design

The original study (Black-Cecchini, 1997) was a primary prevention program study targeting depression that utilized a social/interpersonal and cognitive-behavioral

model using a Solomon four-group design. The Solomon four-group design is a method of controlling for testing effects. The experience of taking the pretest may be beneficial regardless of whether any special training was given. Thus, the pretest itself could be an active independent variable. The Solomon four-group design has two experimental groups and two control groups. In each case, subjects are nested in groups and groups are randomly assigned to conditions; one of these respective groups receives a pretest and the other does not. This enables the researcher to look at the effects of the pretest and all groups receive a posttest (Meltzoff, 1998).

The current study was a 1-year follow-up to the original study (Black-Cecchini, 1997). This longitudinal design involved a follow-up assessment 1-year postintervention to determine the retention of knowledge of social skills and the change in depressive symptomatology (Elmes, Kantowitz, & Roediger, 1985).

#### Instrumentation

The RCDS (Reynolds, 1989) was the instrument used to measure self-reported depression. The RCDS was designed to assess depressive symptomatology in children. The RCDS can be used with children ages 8 through 12 and Grades 3 through 6, and can be administered individually or in a group setting. There are 30 items on the RCDS, 29 of which responded on a 4-point Likert-type scale. The responses include "almost never," "sometimes," "a lot of the time," "all the time." The last item consists of five faces depicting emotions ranging from happy to sad. Children are then asked to choose which one of the faces reflects how they have been feeling for the previous 2 weeks. A child's total

score can range from 30 to 121. The RCDS mean score for fifth graders ( $N = 460$ ) in the standardization sample was reported at 56.80 with a standard deviation of 12.57. A higher score indicates a higher level of reported depression.

The RCDS was standardized on a group of over 1,600 children from the midwestern and western United States. Merrell (1994) indicated that the instrument has "acceptable to excellent" psychometric properties (p. 201). According to the manual, the internal consistency reliability (Cronbach's coefficient alpha) of the RCDS across the total sample was .90. The 2-week test-retest reliability was reported at .82, and at 4 weeks test-retest reliability coefficients ranged from .81 to .92.

The student form of the SSRS (Gresham & Elliott, 1990) was the self-report social skills measure used in the present study. The SSRS is a norm-referenced rating scale comprised of a student form designed to assess social skills, academic competence, and problem behaviors. The SSRS student form, elementary level, is designed for students in Grades K-6. On the SSRS student form, students rate the frequency (0 = never; 1 = sometimes; 2 = very often) on 34 statements describing social behaviors (e.g., "I say nice things to others when they have done something well"). The teacher, parent, and student forms measure three subdomains of social skills labeled cooperation (e.g., "I follow the teacher's directions"), assertion (e.g., "I start talks with class members"), and self-control (e.g., "I end fights with my parents calmly"). Each social skills subdomain contains 10 items. The student form also includes a subdomain identified as empathy (e.g., "I feel sorry for others when bad things happen to them"), which is made up of four items. The

higher the score a child receives on the SSRS, the better his/her social skills are presumed to be.

The psychometric properties of the student form do not appear to be as strong as those for the parent and teacher rating forms but are still generally in the adequate to acceptable range. The SSRS student form standardization sample included 4,170 children from Grades 3 to 10, who were rated by their teachers and parents. The sample was large and included nearly equal numbers of boys and girls from various states. The internal consistencies are adequate overall, for example, total scale coefficient alpha reliability was .83. The subscale internal consistency coefficients ranged from .51 to .74. Test-retest reliability for the SSRS across 4-week intervals ranged from .52 to .68.

The present study utilized the PNID (Lefkowitz & Tesiny, 1980) to collect peer-report data. The PNID is the only existing standardized peer rating instrument measure for assessing depression in children. The PNID consists of 19 statements that comprise three subscales (depression = 13 items, happiness = 4 items, and popularity = 2 items). Students within a class are asked to identify peers to whom the statements apply (Merrell, 1994).

The standardization process of the PNID has included over 3,000 children in Grades 3 through 5 (Merrell, 1994). For the 13 depression items, the internal consistency coefficients have been reported at .85 for the total sample and the test-retest coefficients have been reported at .79 for the total depression score (Lefkowitz & Tesiny, 1980). According to Lefkowitz and Tesiny (1980), each student in each group should receive two kinds of scores: an item score and a total score. The total score is equal to the sum of the

item scores. Every item produces a raw score for each student in a group equal to the sum of nominations by all other students in the group, 1 for a given selection and a 0 for nonselection. This total, divided by the number of students present in any particular group, produces a proportion that was the mean total score for any student in any group on a particular item. There is only normative data on the depression subscale and a mean depression score of 4.0 is the recommended cutoff score for interpreting the presence of noticeable depressive symptoms. The mean score on depression scale for standardization sample was reported at  $M = .239$ . For this administration the students were only allowed to nominate up to four peers per item and not everyone in the class.

#### Questionnaire Data

Along with the assessment battery administered at posttest, the follow-up assessment included an additional questionnaire. This questionnaire was developed specifically for use in both the original study and the present study. The questionnaire was designed to examine the knowledge the subjects had of general mental health principles used in the intervention, such as relevant social skills and methods of alleviating depressive feelings, and was utilized with all children at follow-up (Black-Cecchini, 1997). It was comprised of 15 multiple choice, true/false, and fill-in-the-blank items (Appendix B). Specifically, there are nine true/false questions and six multiple choice that ranged from three to four possible answers. There was only one question that allowed the student to answer "none of the above." The true/false questions were a force-choice answer format.



A total score was not calculated because the study was interested in individual item analysis.

### Procedures

Before this study began, the Institutional Review Board at Utah State University reviewed and gave approval for this investigation. The students were also informed of the follow-up assessment prior to the onset of the original study.

The follow-up assessment took place approximately 1 year after the posttest assessment. The assessment battery was administered in the following order: The RCDS (Reynolds, 1989), the SSRS (Gresham & Elliott, 1990), and the PNID (Lefkowitz & Tesiny, 1980). The test battery was administered by psychology doctoral students. Since the original sample of children had been transferred to a sixth-grade middle school, all children in the school were included in the administration of the test battery. The original sample was placed in various classes at their new school. Because of resource and time restraints, not all classes received the full test battery, resulting in varying sample sizes with the follow-up data. The administrators utilized a standardized set of instructions as recommended for each instrument (except the PNID, as previously mentioned) and all students were tested on the same day. Using identical procedures with all the children greatly reduced or eliminated the possible stigmatization that could have resulted from singling out only children with depressive symptomatology or low social skills. An additional research measure, the Internalizing Symptoms Scale for Children (ISSC;

Merrell & Walters, 1998), was also administered as part of a separate study. These data were not included in the present follow-up study.

## CHAPTER IV

### RESULTS

The report of the analyses is guided by the proposed research questions. An alpha level of .05 was utilized for all statistical significance testing. All the analyses were conducted on the Statistical Package for the Social Sciences (SPSS). The four research questions lead the current investigation and the results produced from the questions will be discussed below. A brief review of the preliminary analysis of the data will be presented first, to describe the intervention and control groups in relation to social skills and depression.

#### Preliminary Analyses

##### Descriptive Statistics (Follow-Up)

The calculation of descriptive statistics was completed for the intervention and control group follow-up data. At follow-up, the sample of students that was obtained varied according to the instrument used. For example, the number of students with data on the RCDS was 35 for the intervention group and 38 for the control group. Also, the SSRS data for the intervention group was 15 and 18 for the control group. As previously mentioned, the variability in the numbers between instruments is attributed to the fact that at 1-year follow-up the children were placed in one sixth-grade middle school and because of the large numbers of students and limited class time available, not all of the original sample was given all the instruments. Table 1 displays the means and standard

Table 1

Means and Standard Deviations for Intervention and Control Groups at Follow-Up

Test	Intervention			Control		
	Mean	<u>SD</u>	<u>N</u>	Mean	<u>SD</u>	<u>N</u>
SSRS						
Assertion	14.60	2.75	15	14.00	3.09	18
Cooperation	15.69	2.85	15	15.56	3.99	18
Empathy	15.87	3.38	15	16.58	3.66	18
Self-control	12.00	4.52	15	11.84	3.82	18
Total	50.50	10.45	14	49.53	11.61	17
PNID						
Depression	.49	.64	31	.33	.39	31
Happiness	.34	.29	31	.50	.31	31
Popularity	.19	.18	31	.26	.15	31
RCDS	48.66	10.05	38	46.94	11.54	35

deviations of intervention and control groups at follow-up for the four subtests of the SSRS (assertion, cooperation, empathy, and self-control), the three PNID scores (depression, happiness, and popularity), and the total score for the RCDS.

The descriptive data (i.e., both intervention and control groups) of the SSRS subscales were all in the average range when compared to the normative data. When utilizing the RCDS, depressive symptoms are indicated by higher scores. A score of 74 is recommended in the RCDS manual as a cutoff score for significant symptoms of depression and possible referral for further evaluation. The scores obtained by this sample of children scored in the nonclinical range, and had overall mean scores lower than that of the standardization sample ( $M = 56.80$ ,  $SD = 12.57$ ). Follow-up means were also

calculated for the intervention and control groups on the PNID and are reported in Table 1. The PNID subscales were within the average range when compared to the normative data. The depression subscale of the PNID has a 4.0 mean depression score that is recommended as the cutoff score for delineating symptoms of depression. All the students in the current study had scores that were below the cutoff score for depressive symptoms.

### Descriptive Statistics (Posttest)

Posttest means from the original Black-Cecchini (1997) study were also calculated for the intervention and control groups and are presented in Table 2. Posttest data presented here utilized only children on which follow-up data were collected. These data were collected during the original study (Black-Cecchini, 1997) and were reanalyzed for the present study.

The posttest data for the two groups on the RCDS was well below the recommended cutoff for considerable depressive symptoms. The SSRS subscales were within the average range when compared to the normative data. The scores that were obtained (i.e., both intervention and control groups) were approximately equal to the normative sample and, as expected, suggest that the children were not depressed. The PNID scores were not available for inclusion in these analyses.

## Analyses of Research Questions

### Question # 1: Changes in Social Skills

The first research question addressed whether, at 1-year follow-up, there was a

Table 2

Means and Standard Deviations for Intervention and Control Groups at Posttest

Test	Intervention <sup>a</sup>		Control <sup>b</sup>	
	Mean	<u>SD</u>	Mean	<u>SD</u>
SSRS				
Assertion	15.13	2.69	13.79	2.17
Cooperation	16.01	2.80	15.14	2.36
Empathy	17.05	2.78	17.30	2.54
Self-control	13.43	3.72	12.21	2.64
Total	52.67	9.10	49.98	6.46
RCDS	47.05	11.74	48.25	10.49

<sup>a</sup>n = 42.<sup>b</sup>n = 44.

difference (e.g., statistical significance and effect size) in social skills between the intervention and control groups. The hypothesis was tested using a univariate analysis of variance (ANOVA) with the groups as the independent variable and the subscale and total scores of the SSRS as dependent variables, resulting in five separate ANOVAs. The results of the ANOVAs indicate that the differences between the SSRS scores of the two groups were not statistically significant. The *p* values ranged from .563 to .913. Results of the ANOVAs are presented in Table 3.

There was not an equal number of subjects in the groups for the posttest and follow-up, therefore  $\eta^2$  was used to calculate the effect sizes for social skills.  $\eta^2$  is a measure of the linear or nonlinear relationship between two variables and can vary from 0 to 1 (Glass & Hopkins, 1984). The effect size estimates ( $\eta^2$ ) revealed that there was



Table 3

ANOVA Results and Effect Size Estimates ( $\eta^2$ ) for SSRS by Group Status at 1-yearFollow-Up

Source	df	Sum of squares	Mean squares	F ratio	F probability	$\eta^2$
SSRS--Assertion						
Between groups	1	2.945	2.945	.341	.563	.011
Within group	31	267.600	8.632			
Total	32	270.545				
SSRS--Cooperation						
Between groups	1	.147	.147	.012	.913	.000
Within group	31	391.882	392.029			
Total	32	392.029				
SSRS--Empathy						
Between groups	1	4.253	4.253	.340	.563	.011
Within group	31	400.365	12.511			
Total	32	404.618				
SSRS--Self-control						
Between groups	1	.209	.209	.012	.913	.000
Within group	31	548.526	17.141			
Total	32	548.735				
SSRS--Total						
Between groups	1	7.232	7.232	.059	.810	.002
Within group	29	3577.735	123.370			
Total	30	3584.968				

minimal difference between intervention and control groups. The difference between SSRS scores was very small, ranging from  $\eta^2 = .000$  to  $.011$ . These effect size estimates suggest that the sample in the intervention group did not differ from the control group sample on reported social skills at follow-up.

### Question #2: Changes in Depressive Symptomatology

This research question examined the difference (e.g., statistical significance and effect size) in depressive symptomatology ratings between intervention and control groups at one-year follow-up. The subscales of the PNID and RCDS total score served as the independent variables and group membership (intervention vs. control) served as the dependent variables resulting in four separate ANOVAs. The results of the ANOVAs are presented in Table 4 and also indicate that the differences in depressive symptomatology between the two groups were not statistically significant. Effect size (ES) estimates were calculated ( $\eta^2$ ) for changes between groups on depressive ratings and indicated weak findings, with ES ranging from .006 to .068.

### Question #3: Follow-up Relationships

The third question was interested in the follow-up relationship between depressive symptomatology and social skills level. Pearson product-moment correlation coefficients were calculated for matching data on both summed depressive symptomatology ratings (RCDS) and subscales of social skills ratings (SSRS) collected at 1-year follow-up. The students who participated in the intervention and control groups were homogeneous in terms of demographic variables (e.g., SES and age), and also there were no statistically significant differences between groups on the dependent measures; therefore, their scores were combined when calculating the correlation coefficient. In comparing the RCDS and SSRS, all the correlation coefficients were statistically significant. The findings of the correlations between the RCDS total score and the SSRS subscale scores ranged from

Table 4

ANOVA Results and Effect Size Estimates ( $\eta^2$ ) for PNID and RCDS by Group Status at  
1-Year Follow-Up

Source	df	Sum of squares	Mean squares	F ratio	F probability	$\eta^2$
PNID--Depression						
Between groups	1	103.725	103.725	.723	.402	.024
Within group	30	4302.275	143.409			
Total	31	4406.000				
PNID--Happiness						
Between groups	1	126.751	126.751	2.206	.148	.068
Within group	30	1723.718	57.457			
Total	31	1850.469				
PNID--Popularity						
Between groups	1	22.240	22.240	1.203	.281	.039
Within group	30	554.635	18.488			
Total	31	576.875				
RCDS						
Between groups	1	53.589	53.589	.460	.500	.006
Within group	71	8264.438	116.401			
Total	72	8318.027				

-.367 to -.570. Also the total scores of the two measures were found to correlate at -.517. These coefficients are presented in Table 5. The scores of the PNID were not included in this analysis because matching data between the PNID and the SSRS at follow-up were not available. As detailed earlier, the original sample was moved to one sixth-grade middle school and presented difficulty in locating and identifying the study sample (e.g., attrition and class assignment).

Table 5

Correlations Between SSRS Scores and RCDS TotalScores at Follow-Up

SSRS subscale	RCDS total score
Assertion	-.570**
Cooperation	-.544**
Empathy	-.458**
Self-concept	-.367*
Total	-.517**

\*\* p < .01 level (2-tailed)

\* p < .05 level (2-tailed)

Question #4 Retention of Knowledge

The last research question addressed, at 1-year follow-up, if there was retention of knowledge for skills taught during the intervention. The Knowledge Questionnaire was utilized to assess this question. The questionnaire was designed to measure general knowledge of social skills and basic psychological principles (see Appendix B; Black-Cecchini, 1997). As previously mentioned, due to limited time and resources the knowledge questionnaire was not administered to all children therefore the follow-up sample was small.

The posttest percent difference for the Knowledge Questionnaire was calculated between the intervention and control groups. Table 6 displays these results. A positive percentage difference indicates that the intervention group had more knowledge than the control group at the end of the intervention. A negative percentage difference implies that the control group reported elevated levels of knowledge compared to the intervention

Table 6

Knowledge Questionnaire: Percent Difference at Posttest between Intervention and Control Groups

Item #	Posttest (percentage correct)		
	% Intervention <sup>a</sup>	% Control <sup>b</sup>	% Difference
1 Control of life	86	68	12
2 Appear friendly	100	87	13
3 Hardest to change	69	57	12
4 Influence each other	95	93	2
5 Change our feelings	71	66	5
6 Social skills	52	41	11
7 Starting conversation	95	55	40
8 Good rule	64	61	3
9 Feel better	100	100	0
10 Control thinking	81	91	-10
11 Method for helping	83	34	49
12 Positive statements	95	86	9
13 Following instructions	95	90	4
14 Accepting "no"	88	80	8
15 OK to feel sad	98	80	18

<sup>a</sup>n = 42.

<sup>b</sup>n = 44.

group at posttest. Only one item (i.e., item #10 control thinking) had a negative percent difference. There were two items (i.e., #7 and #11) that had large positive differences (% difference > 40), which may indicate that the intervention had greatly impacted the intervention groups level of knowledge. On five items there appeared to be minimal differences (e.g., < 5 % difference) in the level of knowledge reported between groups. Three items revealed moderate (i.e., difference > 15%) differences between intervention and control groups at posttest. According to these data, the intervention group generally reported higher levels of knowledge at posttest when compared to the control group.

At follow-up, the percentage correct for each item was also calculated for the intervention and control groups on the Knowledge Questionnaire. These data are presented in Table 7. Overall, fewer control group students were in the follow-up sample at 1-year posttest. Therefore, these data must be interpreted with caution. Two items had a negative percent differences (i.e., #5 and #7). At follow-up, there was only one item (#11) that continued to have a large positive difference (% difference > 40). Five items continued to have a minimal difference (e.g., < 5% difference) of knowledge. These results indicate that at follow-up, the intervention group continued to report positive differences (i.e., all but two items) in knowledge when compared to the control group. These results also indicate that the intervention group continued to show increased levels of knowledge at 1-year postintervention.

Table 8 displays the percentage of correct responses for the 15 items for intervention and control groups combined at posttest and 1-year follow-up. The two groups were combined to understand the overall changes in knowledge for all children across 1 year. At 1-year follow-up the students had a higher percentage correct on 10 of the 15 items. On eight of the items the percentage of correct responses was quite similar (e.g., less than 5% difference) between posttest and follow-up. There were four items that had over a 10% difference that was an increase from posttest to follow-up. These items include: item #1 control of life, item #6 social skills, item #7 starting conversations, and item #8 good rule to remember. These findings suggest that the older children had a slightly greater level of knowledge. In general, the students' knowledge of skills and concepts taught during the intervention changed minimally over the 1-year period between



Table 7

Knowledge Questionnaire: Percent Difference at Follow-Up Between Intervention and Control Groups

Item #	Posttest (percentage correct)		
	% Intervention <sup>a</sup>	% Control <sup>b</sup>	% Difference
1 Control of life	95	79	16
2 Appear friendly	95	71	24
3 Hardest to change	50	50	0
4 Influence each other	95	100	05
5 Change our feelings	55	79	-24
6 Social skills	65	57	8
7 Starting conversation	80	93	-13
8 Good rule	85	79	6
9 Feel better	100	79	21
10 Control thinking	90	86	4
11 Method for helping	80	39	41
12 Positive statements	100	86	14
13 Following instructions	90	86	4
14 Accepting "no"	95	71	24
15 OK to feel sad	100	79	21

<sup>a</sup> $\bar{n} = 20$ .

<sup>b</sup> $\bar{n} = 14$ .

posttest and follow-up. It should be noted, however, that at follow-up the percentage correct ranged from 50-97% on the individual items. This suggests that the majority of students were answering the knowledge questions correctly.

Table 8

Knowledge Questionnaire: Percent Correct (Intervention and Control Groups Combined)  
at Posttest and Follow-Up

Item #	Posttest (percentage correct)		
	% Intervention <sup>a</sup>	% Control <sup>b</sup>	% Difference
1 Control of life	77	88 <sup>c</sup>	-11
2 Appear friendly	94	85	9
3 Hardest to change	63	50	13
4 Influence each other	94	97 <sup>a</sup>	-3
5 Change our feelings	69	65	4
6 Social skills	40	62 <sup>c</sup>	-22
7 Starting conversation	74	85 <sup>c</sup>	-11
8 Good rule	63	82 <sup>c</sup>	-19
9 Feel better	100	91	9
10 Control thinking	86	88 <sup>c</sup>	-2
11 Method for helping	57	58 <sup>c</sup>	-1
12 Positive statements	91	94 <sup>c</sup>	-3
13 Following instructions	93	88	5
14 Accepting "no"	84	85 <sup>c</sup>	-1
15 OK to feel sad	88	91 <sup>c</sup>	-3

<sup>a</sup> $\bar{n}$  = 86.

<sup>b</sup> $\bar{n}$  = 34.

<sup>c</sup> Follow-up percentage higher than posttest percentage.

## CHAPTER V

## DISCUSSION

Childhood depression in elementary school-aged children continues to be viewed as a serious problem in our families, communities, and schools. Even though childhood depression is a serious problem it has only been the focus of researchers for approximately the past two decades. Intervention and etiological studies indicate numerous explanations for the development of childhood depression, including genetic disposition, overidentification with parents who are depressed (environmental), loss of social reinforcement, and loss of role status. According to Black-Cecchini (1997), during the past decade several social skills deficit theories have been developed and implemented with only a small amount of research reporting the efficacy of these interventions.

The purpose of the present study was to determine the longitudinal effects of a school-based social skills intervention one year after completion of the program. The original study utilized a primary prevention model. The intervention used was modified from the Adolescent Coping with Depression Course (CWD; Clarke, Lewinsohn, & Hops, 1990). The main objective of the present study was to determine if students increased and retained their knowledge of social skills 1 year later and if there were differences between intervention and control groups on social skills and depressive symptoms 1-year postintervention. In addition, an evaluation of self-reports of depressive symptomatology were compared to determine if there was a significant change after 1 year.

## Research Questions

The first and second question addressed differences in social skills ratings between intervention and control groups at a 1-year follow-up and depressive symptomatology ratings between groups after 1 year. The results for both of these questions yielded nonsignificant findings. Social skills and depression scores between the intervention and control groups at follow-up and posttest were not significantly different statistically. The social skills scores on both the posttest and follow-up measures fell into the "average" range, indicating that both the students in the intervention and control groups had adequate social skills following the intervention and maintained their skills for 1 year. There was a moderately negative relationship demonstrated between the social skills and depressive symptomatology. This finding indicates that as social skill level increased slightly, depressive symptomatology decreased slightly. The students in the intervention and control groups maintained relatively low ratings on all three administrations of the RCDS (pretest, posttest, and follow-up), indicating that students had and maintained normal to low levels of depression.

There are several explanations that could account for these nonsignificant findings. One explanation for the low depression scores could be that the students in the study had low to normal levels of depression when originally tested, thereby creating a "floor effect" in measuring the depressive symptomatology, which would be expected in a prevention study. Another explanation is that the measures utilized may not have been adequately sensitive to detect small and subtle changes of social skills or depressive symptomatology

at posttest and follow-up (Black-Cecchini, 1997; Clarke et al., 1993). The type of peer nominations and self-report instruments used in this study for the assessment of depression symptomatology may have contributed to the floor effects of the scores. The lack of sensitivity and clustering of scores in the lower end of the scale creates scale attenuation effects.

In order to answer the third research question, "What was the magnitude and direction of the relationship between depression symptomatology and social skills level at 1-year follow-up?," the Pearson product-moment correlation coefficient was used. Because the students who participated in the intervention and control groups were homogeneous in terms of demographic variables (e.g., SES, culture, ethnicity, age, and education) and there were no statistically significant differences between groups on the dependent measures, their scores were combined when calculating the correlation coefficient.

The last question addressed in this study asked, "Was there a retention of knowledge for skills taught during the intervention 1 year later?" The mean scores between posttest and follow-up assessment were quite similar, suggesting that the control and intervention group students maintained their posttest level of social skills at the 1-year follow-up. Additionally, there was little difference between intervention and control groups at follow-up. These data suggest that children in both groups had roughly equivalent knowledge of the psychological principles taught in the intervention.

One interpretation of the data would suggest that students in the intervention group retained most of the knowledge taught during the intervention measured at the time

of the posttest. However, the slight decline in scores could be due to error variance, regression toward the mean, or the 1-year lapse of time between posttest and follow-up with no "booster" sessions to reinforce the material during the school year. Several researchers (e.g., Connell et al., 1985; Lewinsohn & Clarke, 1999) have discussed the need for booster sessions, practice sessions, and so forth, in order to maintain the skills taught. Lewinsohn and Clarke (1999) found that it was particularly important to have booster sessions for those adolescents who had one or more risk factors for depression or had a history of depression. Thus, in this study those students at higher risk for depression may have shown a greater decline, resulting in the slight decrease noted for the intervention group overall.

#### Relationship with Previous Studies

Several studies are available that have incorporated school-based, primary prevention model intervention programs focused on adolescents. Only three of those studies included a primary prevention and school-based model for depression. The first two studies were conducted by the same researchers (Clarke et. al., 1993), and they reported relatively small effects and nonsignificant findings. The first of the two studies implemented an educational intervention and reported effect sizes of  $-.1$  for girls and  $.18$  for boys. The second study utilized a behavioral intervention and reported effect sizes of  $-.01$  for girls and  $.06$  for boys. When compared to the effect sizes of the current study's self-report depression measures (ranging  $ES = .006$  to  $.068$ ), the effects of this study were slightly smaller at 1-year follow-up than the Clarke et al. (1993) and the Black-Cecchini



(1997) studies. It should be noted that in these studies different effect size metrics were utilized (i.e., SMD and  $\eta^2$ ) and therefore cannot be directly compared (as seen in Table 9). This low change from intervention to follow-up is to be expected in this type of prevention study due to the low intensity of the intervention and the lack of sensitivity of the measures used. Table 9 displays the effect size results of the previously mentioned and the current study. The effect size findings reported by Black-Cecchini (1997; ES = .10) may also indicate the low intensity of the intervention and that the content may require refocusing on the depression aspect of the study.

Given the findings of these data in addition to the results from previous studies (i.e., Black-Cecchini, 1997; Clarke et. al., 1993), it may be that a more detailed definition of depression be used in order to more adequately define the variable. For example, a behavioral observation assessment tool, such as the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1993), teacher and parent form, would add an additional descriptor to the depression symptomatology and contribute to the reliability and validity in assessing depressive symptomatology. Other possibilities for identifying variables and procedures that may be able to tease apart the dynamics of social competence may include using not only a multi-source reporting method but a multi-modal method of assessing social competence as well as the CBCL. Furthermore, by extending the definitions of these two variables, it may be possible that more accurate measurements of social competence and depression could be anticipated. Finally, it would prove beneficial to apply these research methods with a clinically depressed sample to further understand the effects of primary prevention.

Table 9

Effect Size Results of Previous and Current Study

Study	Effect size
Clarke et al., (1993), #1	
Girls	-.1
Boys	.18
Clarke et al., (1993), #2	
Girls	-.01
Boys	.06
Black-Cecchini (1997)	
Overall	.10
Current study (1999)	
Range of effect sizes	.006 to .068

## Limitations

The data reported in this follow-up study were limited due to the difficulty in obtaining follow-up scores for all of the students originally involved in the program. Attrition due to this problem was 19%; therefore, only about 81% of the original sample participated in the follow-up testing. In addition, because of time limitations, all of the students who participated in the follow-up study did not have all of the measures administered to them. Consequently, due to assessment requirements, attrition, and resource limitations only a subsample of the original study participants were involved in the follow-up study. For example, a subset of students in the control group received the

PNID, while a subset of students in the intervention group did not. This was also true with the RCDS. The reduction in the sample size resulted in a loss of statistical power.

The qualitative experiences of the students during the year may have impacted the results of this study. Qualitative experiences would include: the death of a loved one, change in peer group, parental divorce, or other events that have a significant effect on mood. Information on whether the students utilized the skills taught and if they had experienced any significant shift or change in mood over the last year would have also been useful information in this study. In addition to the self-report of the student, collaborative reports about mood and significant events from the teacher, parent, and/or primary caregiver over the course of the year could have given a broader context to better understand and intervene with children.

Another possible limitation in this study is that children are continually proceeding through developmental changes. Thus, it is important to gain a firm grasp of the developmental processes that contribute to the emergence and continuance of depressive disorders in children and adolescents in order to better identify an appropriate age of intervention. According to Cecchetti and Toth (1998), differences in and the development of depression may not be apparent at the sixth-grade level or prior to the time that most children enter puberty. Perhaps by identifying high-risk factors related to the development of depression such as gender, SES, age (i.e., working with older, post-pubertal children), and culture, a more pronounced difference can be seen after social skills training. Depressive disorders are neither normal developmental occurrences nor short-lived problems that dissipate with time. Given the prevalence of depressive

disorders across stages of development as well as the various risk factors associated with depression, it may benefit future researchers to better understand the dynamic interaction of these variables.

### Recommendations for Further Research and Clinical Practice

Recommendations for further research include: identifying specific high-risk populations for prevention or early intervention programs, elevating and augmenting the intensity and content of the social skills training in addition to scheduling regular booster sessions, and increasing the sample size. Another recommendation would include integrating mental health components into all grade levels and evaluating outcomes to further identify the optimal introduction of social skills training.

#### Prevention

There have been several interventions (e.g., Black-Checchini, 1997; Clarke et al., 1993) that have been developed or tailored for the prevention of depression in children. Prevention efforts that focus on high-risk populations are likely to be important for promoting social competence later in life (Bandura et al., 1999), thereby increasing the opportunity for social success and reducing the impact of the risk factors that promote the development of depression in young children. This period of early prevention may counteract the social and family problems that detract from a child's ability to develop age-appropriate coping skills (Cecchetti & Toth, 1998). These particular issues (e.g.,

parental depression, parental substance abuse, domestic violence, child maltreatment, low SES) may be risk factors that could be used to identify children who could be particularly benefitted by early preventive training. Therefore, further research on programs like Head Start, which strives to promote a child's competence, is likely to be important in preventing social, familial, and developmental challenges associated with the future appearance of depression. In future studies it may be helpful to identify risk factors such as SES, culture, family history of depression, and parental substance abuse. Once risk factors have been identified, children who meet the criteria for high risk by having an identified number of risk factors (two or more) can be compared to a group of children who have one or zero risk factors. It may be that prevention programs targeting specific populations may demonstrate more of an impact. In addition, the integration of secondary and tertiary prevention by including a model for depression in peers and family members in the training would better meet the needs of all children.

#### Increase the Frequency of Intervention

Eight 50-minute intervention sessions were used in the present study. In a comprehensive review of minimal intervention lengths, when working with adolescents, Connell et al. (1985) reported that at least 30 - 40 hours of contact time may be required in order for a primary prevention program to have lasting effects. It is recommended that additional sessions be integrated into the intervention and that booster sessions be regularly presented in order to investigate if this is helpful in maintaining long-term effects (Lewinsohn & Clarke, 1999).

### Increase the Number of Sample Respondents

By increasing the number of respondents providing information regarding childhood depressive symptomatology and the level of social skills from student self-report ratings to include nominations or ratings by teachers and parents, the data may more accurately represent the construct being measured. These data would have sufficient power to detect small differences that are expected in a primary prevention study. Multiple reporting sources are likely to provide a more comprehensive picture of the emotional state of the child and the accompanying behavior. Other sources may more easily identify changes. It is possible that the student ratings failed to accurately indicate levels of depressive symptomatology and social skills because of a lack of awareness tied to behavior or underreporting, thereby contributing to floor effects (i.e., the instruments were not sensitive enough to measure small, subtle changes). Perhaps a clinical interview, in addition to an instrument such as the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS; Puig-Antich & Chambers, 1978), may contribute more objective sources of data.

In summary, mental health problems interfere with a child's ability to learn and interact with peers within the school environment and can have lasting negative effects into adulthood. Recent shifts in school reform and school-policy changes have mandated schools to become more active in the mental health care of children (e.g., Individuals with Disabilities Education Act as reauthorized in P. L. 105-17, 1997). However, cost continues to be a serious concern to most educational systems. As Black-Cecchini (1997) stated, policymakers are not going to fund schoolwide prevention programs until their



effectiveness has been proven through empirical investigation. This punctuates the need for additional research on cost-effective ways to prevent and intervene with childhood depression.

Finally, the flaws in the design and implementation of this study limited the generalizability of the results. Future researchers need to consider the strengths and weaknesses of the social skills training method for the prevention of depression in order to more accurately determine the impact of this prevention model program. Given the serious ramifications of childhood depression and the current level of knowledge in terms of modality effectiveness, an examination of effective prevention and intervention programs is imperative.

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APPENDICES

## Appendix A: Institutional Review Board Letter of Approval

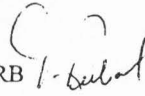


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March 26, 1998

## MEMORANDUM

TO: Susan Crowley  
Norman Johnson

FROM: True Rubal, Secretary to the IRB 

SUBJECT: A Follow-up Study of the Efficacy of a Primary Prevention Program on  
Childhood Depression

The above-referenced proposal has been reviewed by this office and is exempt from further review by the Institutional Review Board. The IRB appreciates researchers who recognize the importance of ethical research conduct. While your research project does not require a signed informed consent, you should consider (a) offering a general introduction to your research goals, and (b) informing, in writing or through oral presentation, each participant as to the rights of the subject to confidentiality, privacy or withdrawal at any time from the research activities.

The research activities listed below are exempt from IRB review based on the Department of Health and Human Services (DHHS) regulations for the protection of human research subjects, 45 CFR Part 46, as amended to include provisions of the Federal Policy for the Protection of Human Subjects, June 18, 1991.

4. Research, involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Your research is exempt from further review based on exemption number 4. Please keep the committee advised of any changes, adverse reactions or termination of the study. A yearly review is required of all proposals submitted to the IRB. We request that you advise us when this project is completed, otherwise we will contact you in one year from the date of this letter.



8. In talking with another person what is a good rule to remember?
- a. talk about yourself a lot
  - b. equal time
  - c. let the other person pick the topic
9. Pleasant or success activities often help us feel better when we feel down.
- True                      False
10. Is it possible for people to change or control their thinking?
- True                      False
11. The rubber-band technique can be one method for helping you \_\_\_\_\_.
- a. erase negative thoughts
  - b. sort out your worries of the day
  - c. hold your newspaper together
12. Do you believe that thinking or reading positive statements about yourself can help you to feel better and prevent negative thoughts?
- True                      False
13. Following instructions can help us to get along better with \_\_\_\_\_.
- a. adults only
  - b. adults and other children
  - c. children only
14. Not arguing or complaining is part of accepting "no" for an answer.
- True                      False
15. When we accept "no" for an answer, it is still OK to feel sad about it, then ask for a reason later on.
- True                      False