Perception of Social Support in Adolescents:
The Impact of a Stress-Management Intervention

by

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ABSTRACT

A stress-management intervention for adolescents called the Coping Skills Program (Madden, James, & Paton, Australia, 1994) was replicated in order to test the generalizability to Canadian adolescents. A social support component was added to inform adolescents about the advantages of seeking social support in times of stress and to increase their awareness of support systems that are available. This study examined the impact of the stress intervention on perceptions of social support from family and friends and on social support coping. The participants (32 females and 25 males) were grade 9 students assigned to one of two treatment groups or a control group. Two treatment conditions were compared; a skills intervention (Skills) and a knowledge intervention (Knowledge). The intervention program consisted of five 50-minute sessions conducted over 5 weeks. Perceived Social Support from Family (Procidano & Heller, 1983), Perceived Social Support from Friends (Procidano & Heller, 1983) and the Coping Questionnaire for Adolescents (Madden, James, Paton, & King, 1992) were administered at pre, post and 6 month follow-up. It was predicted that levels of perceived support from family and friends and the relative use of social support coping would increase from pretest to posttest for both treatment conditions compared with the control group and that the Skills group would maintain these increases from posttest to follow-up. The results indicated that there was a significant Group X Time interaction from pretest to posttest for both the Perceived Social Support from Friends and Perceived Social Support from Family measures, and from posttest to follow-up for the Perceived Social Support from Friends. When the mean scores were examined, the direction of change was generally opposite to the hypothesized direction of change resulting in rejection of the hypothesis. There was a moderate and significant correlation between posttest scores of social support coping and follow-up scores of perceived social support from family. These results indicate that greater use of social support coping predicted an increase in the perceived support felt. Implications for theory and practice are discussed.
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DEDICATION

To my parents, Arnold and June, the root of my caring for others and my foundation for pursuing my dreams.

To my lifelong friend Ray, whose love and enduring strength were a constant comfort to me through this arduous journey. I cherish you.
INTRODUCTION

Research on the developmental stage of adolescence contradicts the commonly held notion that adolescents simply move from childhood to adulthood in a nebulous state. Research in the past 2 decades has critically examined the period of adolescence, revealing a labyrinth of growth and development. However, much of the concentration on youth today focuses on the beginning stages of deviancy, such as stealing, failing in school, or participating as a gang member. Another troublesome issue in adolescent development is involvement in drugs and alcohol. In society today, youth use drugs and alcohol not only out of experimental curiosity, but often chronically to cope with the stresses that they experience. This study investigates the impact of a stress and coping intervention aimed at teaching youth to access social support in times of increased stress.

Adolescence is a transitional period of development in which individuals are confronted with a range of biological changes, psychosocial transitions, and environmental shifts (Windle, 1992). With the onset of puberty, teenagers experience a significant growth spurt that accompanies hormonal and physical changes leading to sexual maturity. Adolescence is also a period of immense cognitive development. Between the ages of 11 years to 16 years of age, individuals sustain moral-reasoning advances, a move from concrete, logical thought to more abstract reasoning, and significant changes in the concept of self (Berk, 1991). The adolescent begins to shift from dependence and ideation of parental figures to a more independent, autonomous sense of self, usually identifying with peer groups to a greater extent.

As a result of these transitions, adolescents experience more life events that may cause them stress reactions such as increased physiological arousal (e.g., anxiety) and somatic problems (such as stomach and head aches). Several studies have investigated life events that are significant for adolescents. From self-report instruments, the most frequently reported life events are trouble with parents, quarrels with friends, school issues, and issues relating to self, such as "I am dissatisfied with my appearance" (Seiffgre-Krenke, 1995; Newcomb, Huba, & Bentler, 1981). Life events are not viewed as sources of pathology, but rather as states of equilibrium that precede
and make positive development possible (Compas, 1987). Different types of challenges occur during adolescence, often stimulating further growth and development. At times, however, these changes or life events may be overwhelming to the adolescent leading to developmental decline or problems (Rice, Herman, & Petersen, 1993). Such problems may include drug and alcohol use, depression, and delinquent behaviors (e.g., Compas, Orosan, & Grant, 1993; Newcomb & Bentler, 1988; Petratis, Flay, & Miller, 1995).

**Stress and Coping**

Stress is viewed as a relationship between objective environmental events or conditions and an individual's cognitive appraisal of the environment (Lazarus, 1990). This conceptualization of stress is reflected in Lazarus and Folkman's (1984) transactional model that highlights the importance of the appraisal of the events by the individual. Researchers have found that the nature and the number of life events, in addition to synchronicity of changes, influence the adolescent's appraisal of events (Lazarus & Folkman, 1984; Rice et al., 1993). Stress results when the adolescent appraises the event as taxing and may not have sufficient resources to cope with the stressor. In response, the adolescent may choose an "escapist" coping strategy, using mind altering substances to cope with the stress (Windle, 1990).

In addition to being a period in which many life changes occur, adolescence is also a time for learning and refining coping strategies. Coping is defined as the use of strategies for dealing with actual or anticipated problems and their attendant negative emotions (Aldwin, 1994). Recent studies of the ways that adolescents and children cope with a wide range of stressors have examined developmental changes in problem-focused coping (defining the problem, generating alternative solutions, and acting on the stressor) and emotion-focused coping (attempts to manage one's emotions associated with the stressor) (Aldwin, 1994; Compas et al., 1993; Seigffre-Krenke, 1995). Compas et al. (1988) found that emotion-focused coping strategies increased as a function of grade, whereas problem-focused coping stayed relatively consistent over development.

The Ways of Coping Checklist (WOCC) (Folkman & Lazarus, 1988) is an instrument commonly used to examine the types of coping strategies used by adolescents. Frydenburg and
Lewis (1994) used the WOCC in their study and found that adolescents may use different coping strategies for different issues. For example, the coping strategies used for achievement and relationship issues consisted of problem-focused and seeking social support skills. For social issues, teens used more wishful thinking and self-blame. Teens may have a repertoire of different coping strategies for different events. Knowledge of the strategies of coping utilized by adolescents and the manner in which these relate to types of concerns is of great benefit, not only for documenting the experience of adolescents but to also assist them in their development of psychosocial competence (Frydenburg & Lewis, 1994). Heller and Swindle (in press) suggest that the perception of social support is one important element in the process of appraising and subsequent coping with stress.

Perceived Social Support

An individual's coping skills as well as peer and family social support may moderate the relationship between life's stressors and mental health outcomes (Kessler, Price, & Wortman, 1988). The experience of perceived social support is reflected by the extent to which an individual believes that his/her need for support, information, and feedback are fulfilled (Procidano & Heller, 1983). The need for love, support, and contact with others is a characteristic of all humans, beginning at birth. According to Bowlby's attachment theory (1980), young children show feelings of security in the presence of their mother or caregiver, and is most evident when fear and distress are activated. The knowledge that the caregiver is close by helps the child manage the heightened emotions he or she experiences. The assurance a child has that the caregiver will support and soothe them also occurs in adolescence. The very awareness of secure, stabilizing social ties in adolescence may generate a difference in self-concept of an individual, leading to a more effective navigation of life's stressors.

Several studies have shown that higher levels of perceived support are related to higher levels of adjustment and psychosocial maturity (Dobow, Tisak, Causey, Hryshko, & Reid, 1991; Gavazzi, 1994; Sarason et al., 1990). In a study utilizing a longitudinal design, Newcomb and Bentler (1988) examined the effects of social support on adolescent drug use. When drug use
levels were measured in early adolescence, 4 years later, and 4 years after that, researchers found that levels of use were lower in those individuals who perceived social support from their family. Those subjects with lower levels of perceived social support showed a lower level of adjustment and more frequent drug use.

**Perceived Support From Family and Friends**

Both familial and peer relationships contribute to adolescent coping in different ways. The family is a critical training ground for learning strategies for the development of interpersonal relationships (Dubow et al., 1992). The family patterns of coping with stressful life events influences the strategies adolescents use to cope with stress. Several studies, including Windle (1988) and Seiffgre-Krenke (1995), explored the effects of perceived family support on adolescent adjustment. Results showed that youths with more difficult temperament factors, such as delinquency and substance abuse, reported lower levels of perceived family support.

Over the course of middle childhood children interact increasingly often with peers, until adolescence, when more time is spent in peer associations than with any other agent of socialization (Berk, 1991). Close friends provide consensual validation, social support, and coping assistance, particularly against potential stressors (like body changes, sexuality, and dating), many of which cannot be comfortably discussed with parents (Seiffgre-Krenke, 1995). Although there have been few studies examining the effects of perceived support from a friend, the research that is available has found that friends do play a role in supplying support resources (e.g., Lakey & Heller, 1988; Seiffgre-Krenke, 1995). Involvement of friends becomes a complex issue when investigated within the context of differing levels of family support.

According to Berndt (1989), one of the conditions for effective support is that individuals must access or take advantage of the support that is available to them. The underlying assumption is that individuals who do not actively seek social support will have a reduced capacity for coping with stress (Heller & Swindle, 1983). The focus in this study is on improving poor social and emotional coping skills in adolescents by means of a stress-management intervention.

**Stress-Management Interventions**
In adolescence, youths are building and refining their repertoire of coping skills. It may be helpful to provide formal training to educate youths to more effectively cope with stress. Historically, the published accounts of interventions for adolescents tended to focus on specific stress-related issues such as anger control skills and phobias (Hains, 1992). Other writers have recommended that children and adolescents be taught to practice coping skills through group psychoeducational programs to deal with academic pressure, peer pressure, and parent-youth conflicts (e.g., Baker & Shaw, 1987; Hains, 1992; Suinn, 1990).

Research has shown that adolescent stress levels and coping strategies can be influenced by formal intervention programs. Hains (1994) implemented a stress management intervention using a Stress Inoculation Program (SIT). Utilizing 21 youths in junior high (5 boys and 16 girls), he taught the adolescents cognitive-behavioral coping skills to use in response to the life stress that they experienced. Using a univariate analysis of covariance, results showed that those youths participating in the program experienced lower levels of anxiety, state anger, and depression.

In a study by Snow, Tebes, Arthur, and Tapasak (1992), social network utilization skills, decision-making skills and group process skills were taught to 6-grade students in an Adolescent Decision-Making Program (ADM). This program was a classroom based intervention to prevent adolescent substance abuse. Results indicated that participating students exhibited increases in use of all three areas of skill acquisition, and tobacco use was less compared to control subjects. A follow-up study 2 years later revealed that program participant's levels of drug use were less than those of the control group.

Results of stress-management interventions have shown positive effects in teaching children and adolescents different and more effective means of coping with the life stresses they may experience (e.g., Dubow, Schmidt, McBride, Edwards, & Merk, 1993; Hains, 1992; Hains, 1994; Kiselica, Baker, Thomas, & Reedy, 1994). These interventions are preventative in nature, effectively intervening at early stages before maladaptive behaviors are established.

Madden, James, and Paton (1994) developed an intervention to assist adolescents to learn improved ways of managing stressful situations. The Coping Skills Training program buffers the
individual against stress and drug use by enhancing adaptive coping and competence. Using techniques such as cognitive-restructuring, progressive muscle relaxation, mental rehearsal, and identification of available social supports, the program teaches adolescents new coping strategies. The aim of the program is to intervene at an early age before chronic stress reactions and alcohol and drug behaviors are established.

The Coping Skills Training Program has been developed and is currently being tested in Australia. In order to test program generalizability to other culture's, the program was implemented in a local high school in Vancouver. This study is a replication of the intervention used by Madden (1994), examining more specifically the impact of a stress-management intervention on social support coping and the relationship between perceptions of social support and social support coping. The general hypotheses were that those adolescents educated on support seeking behaviors would perceive more support from their family and friends as a result of implementing new and more effective coping strategies. The adolescents would learn the benefits of seeking social support to manage challenges and stress.
LITERATURE REVIEW

There has been a recent upsurge of adolescent research that focuses on critical transitional issues. More specifically, research has identified the teen years as a time of increased stress due to these transitions, substance abuse, and initialization of deviant behaviors. Although studies continue to investigate the causes and possible treatment for adolescent substance use and deviancy, the issue of prevention procures equal attention. This review focuses on some of the issues involved in adolescent stress and coping and how the perception of social support from family and friends can ameliorate overwhelming stress. This is followed by an examination of stress interventions and their utility in the prevention process.

Adolescence

Adolescence is a transitional period of development in which individuals are confronted with many life stressors. This stage is described as a period or phase in the life span that involves confrontation with a range of biological changes, psychosocial transitions, and environmental shifts (Windle, 1992). Teenagers experience an intense growth spurt with the onset of puberty, a period of rapid physical change leading to an adult sized body and sexual maturity. Researchers have investigated the impact of hormonal changes experienced during puberty, and have found that the timing of changes in hormonal levels was more likely to be associated with the adjustment of the adolescent than the actual pubertal stage in which the adolescents were classified due to external characteristics (Nottleman et al., in press). Shifts in hormonal levels can effect mood, feelings about oneself, and physical energy, all of which may increase stress levels within the adolescent.

In addition to being a time of physical body change, adolescence is a period of immense cognitive development. According to Piaget (1985), adolescents experience a shift from the concrete operational stage, where thinking is concrete and information tangible, to the formal operational stage, characterized by hypothetico-deductive reasoning and propositional thinking (Berk, 1991). Piaget theorizes that in this stage adolescents develop a new form of egocentrism, an inability to accurately differentiate the abstract perspectives of self and others. The manner in
which the adolescent processes information about himself or herself and the world is a hallmark of cognition in adolescence (Santrock, 1987). A recurring belief in adolescence is that one's own ideas and feelings are so unique that no one else could experience anything like them; a pattern of thinking reflective of heightened narcissism and self-preoccupation. As a result, adolescents may experience self-esteem swings, from grandiose self-image to battered self devaluation (Wexler, 1991). Clearly, the personality disorganization and redefinition experienced by adolescents can be very tumultuous.

Adolescence is also a period of social transition and development. Attachments to parents may recede and a greater focus on independence and autonomy is enhanced. During this time, adolescents develop a sense of identity and uniqueness, continuously constructing a self-concept (Berk, 1991). There is a shift from dependence and ideation of parental figures to a powerful identification to peer groups. Adolescents may experience a heightened sense of vulnerability as a result of this shift, and if they have not had supportive ideations of parents, may experience an increased sense of disorganization and stress (Wexler, 1991). Peer groups contribute to important stages of adolescent development. The intensification of peer group loyalties can be viewed as one means by which young people establish a temporary sense of identity as they separate from their family and begin to build a personal, meaningful identity of their own (Erickson, 1950).

Within the overall concept of self is the component of self esteem, defined as the judgments we make about the worth of ourselves (Rosenburg, 1979). An adolescents inner confidence about himself or herself directly affects how the youth navigates personal relationships, environmental tasks, such as the transition from elementary school to high school and developmental challenges (e.g., physical changes). High self-esteem contributes to effective coping when faced with stressful events (e.g., pressure from school or from friends), whereas lower self-esteem may result in difficulty or failure to negotiate life's stressful events. Inner confidence or self-esteem also reflects an assurance that recognition and acknowledgment will come from the people who count (Wexler, 1991). This concept is similar to the ideation of parental figures. Thus, adequate
support from friends and family may help to make the transition from adolescence to adulthood a smoother one.

**Life Events**

Understanding the transitions that occur within adolescent development allows us deeper understanding of what events adolescents experience as stressful. These transitions can also be operationalized as life events. An increase in the occurrence of life events from childhood to adolescence has been found (Coddington, 1972b). In addition, research on stress in adults reveals that there is a negative relationship between stress and age. Combining these findings suggests that middle adolescence may be the peak life period for experiencing stress (Newcomb et al., 1981).

There has been recent research that examines the significant life events that adolescents experience. Seiffgre-Krenke (1995) studied the life events and subsequent coping of two groups of adolescents. One group of 54 youths in grades 6, 9, and 11 (27 females and 27 males) independently generated life events, based on an introductory definition that an event was some matter with which the adolescents were especially concerned. The other group consisted of 110 youths (55 males and 55 females) who used the list of events generated in group one, rated them and described their coping process. Content analysis from the first group reported 99 categories of events that were assigned to eight domains. The most frequently reported life events from both groups were trouble with parents, quarrel with friends, school issues, and issues relating to self, such as "I felt lonely."

Newcomb et al. (1981) utilized a multidimensional assessment to look at stressful life events among adolescents drawn from the 7th through 9th grades. Participants were 349 males and 622 females. Using several scoring techniques, Newcomb et al. found that meaningful clusters of life events could be empirically derived. Through a process of factor analysis, the seven most reported events were Family/Parents, Accident/Illness, Sexuality, Autonomy, Deviance, Relocation, Distress (related to self) and the eighth group consisted of items not loading
onto the other scales. The average number of events occurring during the past year for the adolescents was 8.95.

In a survey of 260 Australian students in year 10 (54% male and 46% female), Madden (1994) reported 30 categories of stressors that adolescents experience, the top four being academic issues (25.42%), family situation/domestic (25.08%), relationship/sexual issues (8.70%), and social/making friends (6.35%). The average degree of stressfulness, as indicated on the 0 (not stressful) to 100 (very stressful) scale was 64.3.

**Adolescent Substance Abuse**

Judging from the lists of life events that the adolescents in these studies have generated, it is obvious that this is a period of life involving extensive challenge. As a result of developmental challenges (e.g., body changes) and psychosocial challenges (e.g., relying on peer groups rather than family), metamorphosis and change occur. For some young people these changes stimulate further growth. For others, the changes may be overwhelming and lead to developmental decline or problems (Rice et al., 1993). Adolescence is a time when alcohol and/or drug use behavior is initiated (Brown, 1991). In our society there is great concern about the amounts of stress adolescents experience and their involvement in drugs and alcohol (Madden et al., 1994; Newcomb & Bentler, 1988; Petraitis, Flay, & Miller, 1995). The motives for initial use of substances include experimentation, relaxation-seeking or tension-reduction, sensation or pleasure seeking, desire for group affiliation, avoidance of troubles, and to suppress disagreeable feelings or sensations such as anger and frustrations (Johnston & O'Malley, 1986). In a national survey of high school students, 92% reported using alcohol sometime in their lives, whereas 54% reported marijuana use and 40% reported use of some other illicit drug (Johnston, O'Malley, & Bachman, 1986).

In a survey with 260 Australian male and female year 10 students, Madden et al. (1994) assessed alcohol and drug use. They found that 37.7% of the students reported that they had used alcohol, 19.2% had smoked cigarettes, and 10.4% had used marijuana. Students who reportedly used alcohol, drank on an average of 3.4 days per month and drank an average of 4.9 standard
drinks. The three most endorsed reasons for the use of substances were "to feel good," for the experience, and to change feelings in order to relax, relieve anger, frustration, anxiety, depression, or stress.

It is not surprising that adolescents experiment with alcohol and drugs as a result of curiosity; problematic behavior begins when adolescents begin to use alcohol or drugs on a regular basis to cope with stressful life events. Some investigators have proposed that a failure to successfully negotiate, or cope with, ongoing stressful events may result in the use of mind altering substances as an "escapist" coping strategy (Windle, 1990). When adolescents do not have the internal or external resources to effectively cope with stress, maladaptive functioning or psychopathology emerges. Research with both adults and adolescents indicate that increased stress can result in a range of psychological and physiological changes that put a person at risk of psychopathology (Cohen, 1992; Compas, Orosan, & Grant, 1993; Lazarus & Folkman, 1984). In addition to drug and alcohol use, adolescent psychopathology includes depression, anxiety, and delinquent behaviors (Newcomb & Bentler, 1988; Petratis et al., 1995). Compas et al. (1993) have done extensive research on adolescent depression and found that depression proceeds in it's extremity in three different stages. The first stage is a distressed mood, a time when the adolescent experiences feelings of sadness and fear. As the psychopathology progresses, the depressive symptoms form a syndrome, and finally, as a result of extensive symptoms, the symptoms are reflected in a categorical disorder most commonly represented in the DSM-III-R. These disorders seem to follow a developmental course, increasing as the age of the adolescent increases. This three tiered system of depression can be representative of other types of psychopathology in adolescence, as there seems to be a high degree of covariation and comorbidity among different symptoms, syndromes, and disorders (Compas & Hammen, in press). In order to investigate the relationship between stress, developmental delay, and possible psychopathology in adolescents, it is necessary to understand the basis of our theories of stress.
The Theoretical Basis of Stress

Stress is defined as the relationship between the person and the environment that is appraised by the person as being taxing or exceeding his or her resources and endangering his or her well-being (Lazarus & Folkman, 1984). Encompassed within this definition of stress is the importance of the objective nature of environmental events or conditions as well as an individual’s cognitive appraisal of the environment. Neither objective or subjective elements are sufficient alone to understand individual differences in the nature of what is stressful and who is vulnerable to what types of stressful situations (Compas et al., 1993). Several different approaches of measuring adolescent and adult stressful experiences have been used. The model that is most current and that supports the concepts of stress and coping used in the present study is Lazarus’s and Folkman’s (1984) transactional model which is represented in Figure 1. This model reflects a dynamic, mutually reciprocal, bi-directional relationship between the person and their environment. Each individual can influence his or her environment, and the environment can in turn affect the individual. There are several important pathways described within the transactional model of stress and coping. Potential stressful events influence the individual, upon which the individual appraises the event as being stressful or benign. The appraisal of stress can then lead to a range of physiological and psychological changes that may put a person at risk of disorder or psycholpatholgy (Cohen, 1992). Social and internal resources can ameliorate this process and determine the coping response.

As was mentioned previously, life events or transitions can influence the individual in either a positive or potentially stressful way. According to Compas (1987), life events are not viewed as sources of pathology, but rather states of disequilibrium that precede and make positive development possible. Several characteristics of life events or life changes are important in determining their influence on the individual. The nature, the number, the timing, and the duration of the events each affect how the individual experiences the events.

Life events during adolescence can be described as normative life events, non-normative events, or daily hassles (Rice et al., 1993). Normative and non-normative events are also referred
to as minor and major life events (Compas et al., 1993). Normative life events are experienced by the great majority of individuals and occur for most persons at approximately the same point in the life course. Examples include school entry, marriage, and specific to adolescents are puberty and the move from elementary to high school. Non-normative life events are less commonly experienced than normative events and when they occur, may interact with normative events to amplify or moderate their effects (Rice et al., 1993).
Figure 1. Major concepts and mechanisms involved in the transactional model which identifies the relationship between stress and social support in the prediction of disorder. Adapted from The Meaning and Measurement of Social Support (p.110), by S. Cohen, 1992, New York: Hemisphere.
Examples of these events are parental death or divorce. Normative and non-normative events may increase the impact of more frequently, daily occurring stressors called hassles (Kessler et al., 1985).

In adolescence the number of life events and subsequent stress is unusually high, potentially affecting developmental outcomes (Newcomb et al., 1981). For example, when an adolescent is dealing with puberty, the transition to high school, and working through parental divorce, the sheer number of events impacts his/her stress levels and may influence the occurrence of deviancy to deal with overwhelming feelings. In addition, the timing of life events may also influence whether or not events lead to disorder. For example, a large body of work suggests that timing of pubertal development that is deviant from normative expectations (e.g., earlier or later than normal) is often associated with problematic outcomes (Petersen & Ebata, 1987). Finally, the duration of life events also impacts the levels of stress the individual experiences. During this transitional stage of development it would be helpful to educate youth about stress, becoming aware of feelings that indicate elevated stress and how to negotiate stressful life events effectively.

**Cognitive Appraisals of Stress**

Whether a stressful event is related to positive growth or dysfunction is influenced by other mediating factors, including the meaning an event holds for an individual, his or her resources for coping with the event, and efforts made to cope with the event (Compas, 1987). In Lazarus and Folkman's work (1984), cognitive appraisals of stressful events play a crucial role in their transactional model of stress. Within this model, cognitive appraisal can be most readily understood as the process of categorizing an encounter and its various facets within the context of one's own beliefs, values, and experiences. This categorization includes an evaluation of the significance of what is happening for the individual's well being. Lazarus and Folkman (1984) have identified three types of cognitive appraisal: primary appraisal, secondary appraisal, and reappraisal.
Primary appraisal evaluates the issue of "Am I in trouble or being benefited now or in the future?". There are three categories of primary appraisal, namely irrelevant, benign-positive, and stressful. An irrelevant initial appraisal refers to an individual's encounter with the environment that carries no implication for the person's well-being. Benign-positive appraisals occur if the outcome of the encounter is construed as positive, or it preserves or enhances well-being, or will do so in the future. Harm/loss, threat, and challenge describe a stressful appraisal.

Harm/loss appraisal includes some damage to the person that has already occurred, recognition of damage to the self and/or self-esteem, or the loss of a loved person. When an event is appraised as threatening, harm or losses have not yet taken place but are anticipated. This appraisal is usually characterized by negative emotions such as fear and anxiety. One difference between the harm/loss appraisal and the threat appraisal is that the threat appraisal allows anticipatory coping. For example, if we suddenly lose a loved one, we have not had time to put needed coping strategies into place. Whereas if we receive notice that our loved one has been diagnosed with a terminal illness, coping strategies such as grieving, talking, or reaching out to support systems can be employed. The third kind of stress appraisal is challenge. The appraisal of challenge does bear resemblance to threat as a coping response is called for, though it is different in the way that challenge appraisals focus on the potential for gain or growth in an encounter and can include pleasurable emotions such as eagerness and excitement. Both the threat and the challenge appraisal can occur simultaneously.

Secondary appraisal is a complex evaluative process that takes into account which coping options are available, the likelihood that a given coping option will accomplish what it is supposed to, and the likelihood that one can apply a particular strategy or set of strategies effectively (Lazarus & Folkman, 1984). Secondary appraisals are reflected in the question "What if anything can be done (based on the primary appraisal)?”. It is at this point where the individual may find that the demands of the situations are greater than the resources available to cope.

The third form of appraisal is reappraisal, which refers to a changed appraisal on the basis of new information from the environment. This type of appraisal may nourish or resist pressures
on the person and/or information from the person's own reactions. For example, a student might appraise the announcement of the date of a midterm exam to be stressful because of the pressures to study and do well. At a later date, new information that the exam will be open book may result in a reappraisal of the situation, which may be one of challenge instead of threat.

In their research, Lazarus and Folkman (1984) propose that because cognitive appraisal rests on the individual's subjective interpretation of a transaction, it is phenomenological. Phenomenology refers to a method of studying an individual's experience based on that person's perceptions of the environment around them (Giorgi, 1978). Personality factors such as beliefs about self-esteem and sense of control play a large role for this perception and as a result, can affect the individual's appraisals of events. As a result, stress in partially a function of the environment, but is also a function of internal characteristics of the individual (Aldwin, 1994).

Personal resources influence primary and secondary appraisals of threatening situations and have a direct impact on whether or not a stress reaction occurs (Lazarus & Folkman, 1984). Perceptions of social support, access to support systems and feelings of self-worth and esteem are all internal resources as well as characteristics that aid in altering perceptions of impending stress (Procidano & Heller, 1983; Sarason & Sarason, 1990). If these internal characteristics can be enhanced, there is a greater chance that effective coping strategies will be employed before stress levels become overwhelming.

**Coping Strategies in Adolescence**

Important in the transactional model of stress and disorder is the concept of coping. Stress, appraisal, and coping are complex and interwoven processes (Seiffge-Krenke, 1995). Coping is defined as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984). There has been extensive research on types of coping, two of which are common in the literature but need to be differentiated. A coping style usually refers to a broad, pervasive, encompassing way of relating to particular people or types of situations (Lazarus, 1987). One example of a coping style would be the well known Type A personality. A Type A
person has a consistent way of perceiving his or her world and acting on it, more specifically operating with a sense of urgency and high self-expectation. Coping strategies refer to the process a person uses in a particular situation that may be stressful. For example, withdrawal from the situation may be a certain strategy an individual will use when extreme threat is perceived. Cognitive approaches assume that individuals are flexible in their choice of coping strategies and modify their strategies according to the demands of a particular problem (Aldwin, 1995). Changes in coping strategies may also be a result of shifting cognitive appraisals pertaining to a specific event.

There are two functions of coping described in Lazarus model, one being problem-focused coping and the other emotion-focused coping. Emotion-focused forms of coping are more likely to occur when there has been an appraisal that nothing can be done to modify harmful, threatening, or challenging environmental conditions (Folkman & Lazarus, 1980). The individual attempts to manage his or her emotions associated with the stressor instead (Compas et al., 1993). A large group of emotion-focused strategies are cognitive processes that include avoidance, minimization, distancing, and selective attention. Another strategy is to change the way an encounter is construed, without changing the objective situation, very similar to reappraisal. An example of this may be a cognitive maneuver such as "I considered how much worse things could be" (Lazarus & Folkman, 1984).

Problem-focused coping strategies are often directed at defining the problem, generating alternative solutions, weighting the alternatives in terms of costs and benefits, choosing among them and acting (Lazarus & Folkman, 1984). Problem-solving processes focus on the environment, not on the individual, as in emotion-focused coping. According to Lazarus and Folkman (1984), problem-focused coping and emotion-focused coping influence each other in a stressful encounter. One one hand, they can facilitate each other. For example, during an individuals generation of alternate solutions to a problem (problem-focused coping), he/she may arrive at the conclusion that distancing from the problem would be best (emotion-focused coping). These coping functions can also impede each other. An individual who has recently experienced a
loss of a loved one buries himself in organizing what needs to be done to settle the estate, burial, or problem solving the best way to handle this event. This individual is reluctant to focus on and express the emotions of grief and loss, thus neglecting to use emotion-focused coping.

As was stated previously, effective coping strategies can minimize the deleterious effects of stress (Lazarus & Folkman, 1984). Both problem-focused and emotion-focused coping strategies can be taught to adolescents, resulting in an internal regulation of stress reaction and subsequent coping plan. One example of problem-focused coping is seeking social support, a focal concept in this study.

Relevant Research: Adolescent Coping

Early research found that in the field of stress, coping and development there has been no systematic efforts to conceptualize the ability to cope during adolescence, and as a result adult coping literature must be relied on as a guide in the consideration of coping in adolescence (Rutter, 1981). Due to the lack of measures developed to evaluate adolescent coping, subsequent studies have constructed new instruments. For example, the COPE (Carver et al., 1989) was developed for use with college students and has recently been used effectively with youths ages 14 to 18 years of age. The differentiation between adult and adolescent coping supports the hypotheses that there are indeed differences in coping in adolescence (Compas et al., 1993; Compas et al., 1988; Frydenburg & Lewis, 1994; Phelps & Jarvis, 1994; Rice et al., 1993).

Compas, Malcarne, and Fondacaro (1988) investigated the use of both problem-focused and emotion-focused coping in older children and young adolescents. They used a sample of 130 children and adolescents ranging in age from 10 to 14 years, including 73 girls and 57 boys. Grades 6, 7, and 8 were represented. The adolescents completed an open-ended instrument, designed by the researchers to assess coping, by describing one stressful interpersonal event and one academic event. They subsequently generated a list of all the possible ways they could have coped. Univariate analysis indicated that emotion-focused alternatives increased as a function of grade, \( F(2,101) = 5.64, p = .005 \). Eighth graders generated more emotion-focused alternatives than both sixth and seventh graders. Problem-focused coping did not change with age. A
MANOVA for the number of stressors used with academic pressures found a significant effect for 
sex. The number of emotion-focused strategies used by girls was higher than that for boys, 
\[ F(1,105) = 8.14, p = .005 \]. In addition to reporting different strategies used by adolescents, this 
research indicates that adolescents may change or modifying their coping strategies in relation to 
developmental stage and age. One problem in this study is that the reader is unsure of the reason 
for the coping change; did the older children have some instruction in school (e.g., a life skills 
course) that accounts for more emotion-focused coping, or is this change simply a result of 
development?

Another question in current research is whether or not adolescents are more consistent in 
their coping than in adulthood. In other words, what coping strategies are used by adolescents in 
specific situations. To investigate the ways in which coping varies in relation to the different 
concerns of youth, Frydenburg and Lewis (1994) used a sample of 643, 16-18 year old 
adolescents (44% males and 56% females). Responding to a questionnaire, adolescents identified 
three areas of concern to them, (a) Achievement (employment, exams, marriage), (b) Social Issues 
(fear of nuclear war, sexual equality), and (c) Relationships (peers and friends, independence from 
family). Based on information gleaned from the Ways of Coping Checklist (Folkman & Lazarus, 
1988), eight common coping strategies were identified. MANOVA was used to isolate patterns of 
coping used for different issues and findings indicated that different coping strategies were used 
for achievement and relationship issues (such as problem-focused, seeking social support, and 
wishful thinking strategies) than for social issues (wishful thinking, self-blame). Coping strategies 
were ranked within the three different areas and Spearman rho correlations revealed that usage of 
coping strategies correlated significantly between Achievement and Relationships, rho = .97, \( p < 
.001 \), and was higher than those of Social Issues and Relationships, rho = .74, \( p < .05 \), and 
Achievement, rho = .69, \( p < .05 \). Social Issues seem to be managed somewhat differently that 
Achievement and Relationship problems, and the statistically significant relationships between 
concerns and coping provides support for the hypothesis that the usage of different coping 
strategies is associated with the nature of the concern.
Emotion-focused and problem-solving strategies may not be the only coping strategies adolescents use. Phelps and Jarvis (1994) provided evidence to support the hypothesis that there are more than two categories of coping strategies in adolescence. They utilized the COPE measure, in which Carver et al. (1989) further divided problem-focused and emotion-focused coping into theoretically distinct coping strategies. The sample consisted of 484 9th through 12th grade students, 260 male and 224 females participants. Factor analyses yielded four interpretable factors, that the researchers entitled Active Coping, Avoidant Coping, Emotion-focused Coping, and Acceptance. Interestingly, Chi square analysis revealed a significant gender difference in coping, \( \chi^2(16, n=473) = 27.94, p<.03 \). Females reported using Emotion-focused, Seeking Social Support, and Acceptance strategies more, and males used more Avoidant coping strategies such as substance use and humour. These results are important in determining what strategies adolescents use and which strategies can be encouraged, and more specifically, highlighting an important difference in coping means between males and females. Unfortunately, this study did not indicate the effectiveness of the different coping strategies used by males and females.

Adolescence may constitute a critical stage in the development of coping skills and as a result of lack of mastery of effective coping strategies, may turn to more illicit substances to modify internal states (Aldwin, 1994). Coping processes that are used in response to stress may be important in understanding psychopathology during this developmental period and during later adolescence as well (Compas et al., 1993). Compas (1993) presents a model of stress and coping processes in adolescence that may lead to depression or other psychopathology. He postulates that the use of more ruminative type coping when an individual experiences a depressed mood may lead to a greater depressive outcome than if a distracting coping strategy was used.

**Perception of Social Support**

The social environment is not just a major source of stress; it also provides vital resources that individuals can and must draw upon to survive and flourish (Lazarus & Folkman, 1984). Several studies have reported that social support received by children is one important resource that protects them against the negative effects of life stressors (Sandler, Miller, Short, & Wolchik,
Cobb (1976) was instrumental in beginning research on the domain of social support. He defined social support as information leading to one or more of three outcomes: (a) a feeling of being cared for; (b) the feeling that one is loved, esteemed, and valued; and (c) the sense of belonging to a reciprocal network. More globally, our social network represents the actual structure of relationships that we as individuals have, and can be assessed in terms of structural and functional dimensions (Procidano & Heller, 1983). When used to indicate the level of social support, social network measures make the assumption that having a relationship is equivalent to getting support from it (Lazarus & Folkman, 1984). This is not always the case. The number of relationships we have may not be proportionate to the amount of support we obtain.

In contrast, social support refers to the nature of the interactions, especially how these are evaluated by the person as to their supportiveness (Cohen, 1992; Lazarus & Folkman, 1994; Sarason et al., 1992). The individual's subjective perception of the impact of his or her social network is represented by the term perceived social support. In Jessor's (1979) analysis, perceived support is the most proximal feature of a range of interpersonal variables and one aspect of the bigger framework of social support (Lazarus & Folkman, 1984).

Perceived social support is defined as the extent to which an individual believes that his/her need for support, information, and feedback are fulfilled (Procidano, 1993). This includes the knowledge of or availability of people on whom we can rely, people who let us know that they care about, value, and love us (Sarason et al., 1983). Heller and Swindle (in press) suggest that the perception of social support is one element in an individual's appraisal of and subsequent coping with stress (Procidano & Heller, 1983).

Perceived availability of social support has been found to act as a stress buffer over a wide range of studies (Dubow, Tisak, Causey, Hryshko, & Reid, 1991; Newcomb & Bentler, 1988; Wethington & Kessler, 1986; Windle, 1992). The possible protective effect of social support in the face of psychosocial stress is precisely stated in what has been termed the buffer or buffering hypothesis (Cohen & McKay, 1984). The hypothesis states that psychological stress will have deleterious effects on the health and well-being of those with little or no social support, while these
effects will be lessened or eliminated for those with a stronger support system. A number of researchers have differentiated between psychological and non-psychological forms of social support (Cobb, 1976; Lazarus & Folkman, 1984; Schaefer et al., 1982). Psychological forms of social support include informational support and emotional support, whereas non-psychological forms of social support refer to tangible provision of material aid. Tangible support may involve direct aid such as loans, gifts, or services such as taking care of someone who is ill (Lazarus & Folkman, 1984). According to Cohen and McKay (1983), tangible support is probably the most effective when the provision of aid is viewed by the recipient as appropriate.

Informational support can be described as providing information or advice, and giving feedback about how the person is doing (Schaefer et al., 1982). This type of support may alter one's assessment of threat or one's assessment of their ability to cope. More specifically, social support may buffer people against stress by helping them redefine a situation as less threatening. For example, an adolescent may evaluate the announcement of a test in class as threatening. With a sense of panic, he/she talks to a friend, and the friend points out that the individual knows the material well. This interaction may change the adolescents appraisal of the threat.

Informational support may also affect one's ability to cope. One method of enhancing a person's coping abilities would be for the members of the support system to suggest alternative coping strategies (Cohen & McKay, 1983). On the other hand, support systems could also reassure a person that their coping strategies are effective.

Emotional support refers to a function of social support that contributes to the feeling that one is loved or cared about. This may include attachment, reassurance, being able to rely on and confide in a person (Lazarus & Folkman, 1984). Cohen (1992) postulates that social support may influence one's feelings of control and self esteem and contribute to a sense of belonging.

The impact of social support on adolescent drug use and problems later in life was the focus of a study by Newcomb and Bentler (1988). The study used data from 654 individuals completed at three intervals: seventh, eighth, or ninth grade, 4 years later in adolescence and 4 years after that, when the subjects were young adults. Researchers used a general drug use
measure that also included reports of psychosomatic complaints, a social conformity measure, and a social support scale, identifying relationships with parents, family peers, and other adults. Using a point biserial correlation, the researchers found that the effects of lower levels of social support in adolescence were evident over the 4-year span to young adulthood. Every young adult problem area was reduced by the presence of earlier social support. Numerical data showed significant relationships between social support and emotional distress, $r = -0.29$, $p < .001$, problems with drugs, $r = -0.26$, $p < .001$, and psychosomatic complaints, $r = -0.35$, $p < .001$.

Dubow, Tisak, Causey, Hryshko, and Reid (1991) also used a longitudinal study format to investigate the contributions of stressful life events and social support on children's behavioral adjustment. The subjects were 361 third through fifth graders (195 girls and 166 boys) interviewed at two time intervals (Time1 and Time2). Time 2 occurred 2 years later. Using subjective measures, the researchers asked the children for information on their social support and social problem-solving; the parents for information on social status, behavior problems, and stressful life events; and the teachers for information on the child in the classroom. Using a hierarchical regression technique, researchers found that higher levels of social support were related to higher levels of adjustment. In addition, higher levels of initial social support (total) predicted higher grade point averages, and higher levels of initial family support predicted higher levels of teacher-rated competencies. The two studies just examined indicate the positive influence of social support on later adjustment in both young children and adolescence.

Research suggests that only those interpersonal relationships that provide the appropriate forms of support will operate as effective buffers (Cohen & McKay, 1984). In other words, the resources of one's support system must match the coping requirements of the situation in order to provide an effective buffer. This principle defines the stressor-resource matching hypothesis (Cohen, 1992). One example of an ineffective resource would be a father giving his child an increase in his/her allowance upon the move of his/her best friend. A more appropriate resource would be emotional support.
Another explanation for why perceived support acts as a stress buffer views support as a stable individual difference that generates changes in cognition or self-concept (Sarason, Sarason, & Pierce, 1990). Sarason et al. (1990) argue that early experiences with attachment relationships (particularly parental attachments) have enduring effects on schemas about relationships and support expectancies. This very awareness of secure presence of social ties may be another mechanism in the process of stress buffering (Sandler, Miller, Short, & Wolchik, 1989). The concepts of security and social ties are reflected in theories of attachment by Bowlby (1980) and Ainsworth (1982); which reasoned that if the development of attachment has gone along as it should, infants should show feelings of security in the presence of the mother or caregiver. The quality of the infant's attachment ought to be most evident when fear and distress are activated. As such, the attachment behavior system is seen as biologically functional in maintaining protection from danger and maintaining a subjective sense of felt security (Sandler et al., 1989).

According to Boyce (in Sandler et al., 1989), humans have a basic need for a sense of stability and permanence. Support may provide protection from the negative effects of stressful situations by augmenting the sense of stability that is threatened or decreased by the occurrence of stressful events. In the life stage of adolescents, both attachments with parents and peers are important and may offer a sense of stability and permanence.

Perceived Social Support as an Internal Characteristic

High levels of perceived support are related to a number of personality characteristics including social competence, internal locus of control, and anxiety (Sarason et al., 1990). Two studies by Sarason et al. attempted to identify aspects of the person's perceptions of self and others that might be particularly associated with support perceptions. The first study examined the association between college students' perceived support and cognitive or working models of generalized peers. In two separate sessions, 1 week apart, students completed the Social Support Questionnaire (SSQ) and other instruments tapping loneliness, shyness, and social skills. In the second session, students filled out the questionnaires as they thought a typical student would. Results showed that low SSQ scorers were not only the most negative in their evaluation of others,
but their perceptions of others were most discrepant from reality. High SSQ scorers relative standing to others was accurate, and they also believed others to have more available social support and be more satisfied with this support than low SSQ scorers. The researchers conclusions indicate that these perceptions of personal worth and the social characteristics of others may be an important ingredient in the ability of those with high perceived social support to negotiate social situations with greater effectiveness and less anxiety.

The second study also utilized college students to examine perceptions of hypothetical peers and investigated the relationship between perceived social support and how people view themselves and how important others view them. Results showed that individuals who perceive support to be available to them and are satisfied with this support have a variety of positive attributes. Lack of perceived support was accompanied by feelings of personal inadequacy and social rejection. According to Sarason et al. (1990), the results of these two studies represent an interaction between general cognitive sets that are a part of an individual's personality and his or her view of relationships experienced in the course of social development. Both of these studies used college students as subjects and as a result, generalizability to an adolescent population may be questionable.

In a study by Lakey and Cassady (1990), the viability of conceptualizing perceived social support as a cognitive personality variable was examined. A sample of 100 college students (70 women and 31 men) completed two measures of social support, one reflecting perceived support and the other reflected enacted support received from the environment. The participants also completed measures of three cognitive variables: self-esteem, dysfunctional attitudes, and control beliefs. In addition, the Beck Depression Inventory (Beck, 1967) and the Trait form of the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970) were administered. The authors hypothesized that perceived support would be more strongly related to measures of cognitive personality variables than would enacted support. Results showed that perceived support was significantly related to all three cognitive variables and enacted support was not significantly associated with any (perceived support and dysphoria, r=-.45, p<.01, perceived support and trait
anxiety, \( r = -0.51, p < 0.01 \), perceived support and self-esteem, \( r = 0.40, p < 0.01 \). Multiple regression analysis were conducted in which perceived support was used to predict symptomology after the effects of cognitive variables had been entered first. Perceived support continued to predict dysphoria \( (R^2 \text{ change} = 0.025, p = 0.043) \) and anxiety \( (R^2 \text{ change} = 0.025, p = 0.017) \). This study supports the utility of conceptualizing perceived support as a cognitive personality variable. The most interesting findings were that much of the associations between low perceived support and psychological distress could be accounted for by individual differences in negative cognition.

A supportive network may counteract the negative effects of stress by directly increasing self-esteem by continuing esteem-building relationships, replacing, or compensating for lost sources of esteem (Sandler, Miller, Short, & Wolchik, 1992). Esteem enhancement is defined as the effect of a relationship to elicit positive self-cognitions (Sarason et al., 1992). Knowing that we have supportive, stable social network that supports us can result in a feeling of confidence, assurance, and mastery. As a result, we may feel less threat from stressful situations and use more effective coping strategies.

Perceived Support from Family

The interpersonal resources emphasized in adolescence are close relationships including the nuclear and extended family, peers, teachers, social groups, and the social context (Seiffge-Krenke, 1995). Researchers have found that support from these different sources may be differentially related to adjustment (Dubow et al., 1991). Both familial and peer relationships contribute to adolescent coping in different ways.

The family is a critical training ground for modeling and learning strategies for the development of interpersonal relationships (Dubow et al., 1992). Parent-adolescent relationships may serve as a major support system an adolescent experiences in addition to being a source of stress. In a study involving 215 adolescents aged 12 to 16 (consisting of 109 males and 106 females), Seiffre-Krenke (1995) investigated the differences in stress perception between adolescents stemming from different family types, and also analyzed the relationship between family climate perceived by the adolescent and his or her functional or dysfunctional style of
coping. She found that an adolescent's appraisal of stress and style of coping is related to the type of his/her perceived family climate. For example, adolescents from disengaged and conflict oriented families exhibited a low level of active coping and a high level of withdrawal. In a family described as cohesive and structured, the sense of family support and organization contributed to low stress and low levels of withdrawal. Seiffre-Krenke suggests that a supportive family atmosphere is not sufficient in itself for an adolescent's functional coping, but that there must also be an opportunity for the adolescent to exercise this form of coping.

Congruent with the above study, Windle (1988) examined the interrelations between the number of difficult adolescent temperament factors, problem behaviors, and perceived level of family emotional support. Using a sample of 311 high school students, 189 females and 122 males, subjects reported on the following characteristics: temperament, by the Revised Dimensions of Temperament Survey (DOTS-R) (Windle & Lerner, 1986), substance use, childhood behavior problems using the Childhood Hyperactivity and Minimal Brain Dysfunction measure (HK/MBD), delinquency, depressive symptoms using the Center for Epidemiological Studies Depression Scale (Radloff, 1977), and perceived support from family, using the PSS-Fa (Procidano & Heller, 1983). Using a one-way ANOVA analysis, results showed that individuals with more difficult temperament factors had more childhood behavior problems and lower levels of perceived family support, $F(4,297) = 7.04, p<.001$. Difficult temperament was also related to higher levels of substance abuse. Unfortunately, because of the cross-sectional data reported in this study, direction of causality can not be inferred. Difficult temperament may indeed contribute to lower levels of perceived support.

Several research studies have challenged the hypothesis that perceived social support acts as a stress-buffer, or in other words, that an interactional effect (e.g., social support x stressful life events) has not been substantiated (Baer, Garmezy, McLaughlin, Pokorny, & Wernick, 1987; Burt, Cohen, & Bjorck, 1988; Wills & Vaughn, 1989). In contrast to the interactional approach is the main effect approach (e.g., social support and stressful life events). In a study by Windle (1992), both main effects and stress buffering models are evaluated within the concept of perceived
family and friend social support. The sample consisted of 311 high school students, the mean age being 15.7 years (SD=0.65). Sixty-one percent were girls and 39% percent were boys. Windle measured alcohol consumption, alcohol problems, delinquent activity, depressive symptoms, stressful life events, and perceived social support from family (PSS-Fa) and friends (PSS-Fr). Time 2 measure occurred 6 months after Time 1. There was a significant relationship between social support from family and alcohol consumption, r=-.35, p<.01 and delinquent activity, r=-.26, p<.01 at both Time 1 and Time 2. The relationship between support from friends and both alcohol consumption and delinquent activity was insignificant. As a result of a hierarchical multiple regression model, there was little evidence of stress-buffering for family or friend support for girls at either time; for boys there was some evidence of stress-buffering by family social support with regard to alcohol consumption. Consistent in this study was the difference between boys and girls in the relationship of perception of familial support and problem behaviors. Lower family support was a significant predictor or problem for girls but not for boys. The authors suggest that adolescent girls rely more on their family for a sense of identity than adolescent boys.

There was a significant main effect for stressful life events, indicating that low family support may predict problem behavior in adolescence. Readers must be wary of the fact that students in this study were White, middle-class adolescents, so generalizability to other populations is low. Second, this study employed self-reports only by the adolescents themselves; it would be helpful to obtain other, more objective reports assessing behaviors by parent or peer ratings.

Perceived Support from Friends

Sullivan (1953) hypothesized that friendships become more supportive relationships between middle childhood and early adolescence. This is a well-known developmental stage where adolescents shift their focus from parental relationships to peer relationships. There has been numerous studies examining perceived family support and its influence on adolescent coping with stress, though research on perceived support from friends has been sparse.
A correlational study looked at the relationships between perceived family and friend support and psychosocial maturity (Gavazzi, 1994). Psychosocial Maturity, as measured through the Individual Adequacy measure of the Psychosocial Maturity Scale (Greenberger & Sorenson, 1974), includes identity, self-reliance, and work orientation. Using the PSS-FA and PSS-FR measures (Procidano & Heller, 1983), researchers found significant relationships between perceived family support and identity, $r=.69$, $p<.001$ and self-reliance, $r=.60$, $p<.001$. Although there were significant relationships between perceived support from friends and identity, $r=.37$, $p<.001$, regression analysis revealed that adolescents with the highest levels of perceived family support reported greater levels of psychosocial maturity, regardless of levels of support from friends. The involvement of friends with differing levels of family support clearly is a complex issue.

One study looked at the issue of support from friends in the context of a friend simply "being there" during a test of problem solving skills (Lakey & Heller, 1988). Researchers divided the subjects into two groups, those who took the test alone and those who had a friend present while taking the test. Results showed that companion students did not differ from alone students on problem-solving, but showed lower perception of stress due to the experiment, $t(42) = 1.65$, $p = .054$. The subjects in this research were college students, which does limit generalizability to an adolescent population. Studies like this do offer insight in regards to the sense of security or confidence an adolescent may feel in stressful times as a result of perceiving support from a friend or friends.

**Stress Interventions**

Research has found that maladaptive functioning in adolescents, such as drug and alcohol use, seems to result from the need to reduce stress and combat negative feelings. It is logical then to focus on improving poor social and emotional coping skills and subsequently preventing substance use to relieve these inadequacies (Newcomb & Bentler, 1988). During the transitional stage of adolescent development when youths are building and refining their coping repertoire, it
may be helpful to provide formal training to educate adolescents on effective methods of coping with stress.

A variety of treatment programs aimed at reducing stress have incorporated aspects of operant learning, social skills training, and cognitive-behavioral techniques (Maag & Kotlash, 1994). Historically, various interventions based on operant learning principles developed out of a need to treat problems of children and adolescents. Some behavioral techniques include time-out, token economies, and behavioral contracting (Davidson, 1990). A popular criticism of operant-based procedures is that they fail to take into account the possibility that target youngsters may not possess the requisite skills for producing and using appropriate behaviors (Kennedy, 1982). Moreover, social skills training has been criticized on the fact that there is a lack of focus given to the relation between training procedures and specific subject characteristics (Maag & Kotlash, 1994). More so than social skills training and operant learning, cognitive therapies are now well established as a component for the treatment of a wide range of child behavior problems. There are many different cognitive theory approaches that aim to influence cognitive products, structures, and operations (Spence, 1994).

There have been numerous studies on the efficacy of these interventions for treating child and adolescent problems, though most intervention efforts have been adapted to help adolescents deal with specific stressors, such as anger control or phobias. There is a lack of research on interventions and techniques used for the prevention of maladjustment in children and teens. Teaching adolescents cognitive strategies to help them deal with more general forms of stress is important, as many stressors occur on a persistent daily basis (Hains, 1994). This type of education may assist adolescents in coping effectively with stressors and deter them from resorting to alcohol and drug use to cope. Several writers have recommended that children and adolescents be taught to practice coping skills through group psychoeducational programs in the school environment, so that they can effectively respond to stressors as they arise (Baker & Shaw, 1987; Suinn, 1990).
Kiselica, Baker, Thomas, and Reedy (1994) researched the effectiveness of a preventative stress inoculation program (SIT) on anxiety, stress, and academic performance among adolescents. Anxiety in childhood and adolescence is associated with depression, oppositional behavior, loneliness, and somatic complaints; teaching strategies for coping with anxiety could be of benefit in preventing maladaptive anxiety reactions (Suinn, 1990). Participants were 48 ninth-grade students (26 males and 22 females), divided randomly into a treatment and a control group. Measures included a trait anxiety scale, symptoms of stress inventory (SOSI), knowledge acquisition test and expectancy for success. Using a stress-inoculation training paradigm, the treatment group received training in progressive muscle relaxation, cue-controlled relaxation, cognitive restructuring, and assertiveness. SIT consists of three phases: (a) conceptualization, (b) skills acquisition and rehearsal, (c) application and follow-through.

Researchers hypothesized that there would be a significant negative correlation between knowledge acquisition scores and trait-anxiety/symptoms of stress scores. This hypothesis was supported by repeated measures ANOVA, showing significant main effects for treatment, indicating that the SIT participants scored significantly lower than control participants on the trait-anxiety and SOSI, $F(1,44) = 77.21, p< .001$. These findings suggest that SIT may be an effective preventative anxiety-management and psychosocial-adjustment strategy for adolescents.

SIT training focuses on providing the target individual with specific coping skills, consisting of palliative (emotion-regulation) and instrumental (problem-focused). Included in these conceptualizations are problem-solving training, cognitive restructuring and social-skills training (Meichenbaum, 1985). The strengths of SIT lies in its flexibility and prescribed format for determining the nature of observed performance difficulties, matching intervention techniques with needs assessment, and programming for generalization (Maag & Kotlash, 1994). Inherent in flexibility of an intervention is the option for tailoring a specific training program to the needs of each group.

Hains (1992) also implemented a stress management intervention using the SIT paradigm. Using a group of 25 adolescent boys, 15-16 years old, he examined the effectiveness of two
cognitive behavioral interventions in coping with stress reactions. The boys were randomly assigned to three groups, a cognitive restructuring group, an anxiety management group, and a waiting list control group. Each group was assessed on levels of anxiety, anger, self-esteem, depression, and anxious self-statements at pre, post and following the intervention. Results showed significant group differences between the two training group and the control group were obtained on state anxiety, $F(2,21) = 14.29$, $p < .001$, trait anxiety, $F(2,21) = 6.12$, $p < .01$, state anger, $F(2,21) = 14.53$, $p < .001$, anger expression, $F(2,21) = 6.19$, $p < .01$, and depression, $F(2,21) = 3.33$, $p = .055$. There were no significant differences between the cognitive restructuring and the anxiety management groups.

The number of participants was low in this study, limiting the strength of the results. The youths were White, with the exception of one Asian youth, and the boys were in a college preparatory school, both of which limit generalizability. In addition, because the subjects were all male, readers must be cautious in generalizing the results to females.

Hains (1994) utilized another group of adolescents to examine the effectiveness of a school-based cognitive behavioral stress management program. In this study, both girls and boys participated ($n=19$), with a ratio of 5 boys and 16 girls. This study is similar to the previous one by Hains (1992), in that measures used are anxiety, anger, self-esteem, depression and stressful events, and the intervention follows a SIT format. New strategies used by the researcher include separating the participants into two groups based on a preassessment of high and low levels of emotional arousal. Both of these groups were then divided into a training group and a waitlist group. Hains hypothesis was the youths who received the cognitive-behavioral training were expected to show improvement on the self-report measures of anxiety, anger, depression, self-esteem, and reports of daily stressors.

Using a 2X2 factorial design, results showed significant group x level interactions. The source of the interactions was significant improvements from pre- to post assessment for the high emotional arousal youth in the training group on trait anxiety, self-esteem, depression, and trait anger. No significant improvements occurred for the low arousal group in training. This may be
due to a lower clinical level of arousal where there is no room for improvement. There was no change in the waitlist group.

This study lacks a control group, which would rule out alternate explanations for participant improvement, such as demand characteristics. Again, the participant number is low and in this study there was no follow-up measure, which would be an important measure for maintenance of training gains.

The results of both of the study's by Hains (1992, 1994) indicate the positive benefits of a school based, cognitive-behavioral stress management program for adolescents. Schools represent logical settings for prevention and intervention efforts for helping adolescents cope with general stress reactions. In addition, cognitive-behavioral strategies employ emotion-focused coping skills in addition to problem-focused skills, teaching youths to cope with emotional arousal that is related to or a product of stressful events (Compas, 1987).

Included in the domain of problem-focused coping is the strategy of seeking social support. In a study by Snow, Tebes, Arthur, and Tapasak (1992), social network utilization skills (i.e., the ability to seek out adults for information and support during stressful situations) were taught to adolescents in addition to decision-making skills (i.e., generating alternatives, looking at risks and alternatives), and group process skills (i.e., the ability to identify and respond to group dynamics and processes). The program was called the Adolescent Decision-Making (ADM) Program. The underlying assumption of the ADM Program is that adolescents who have poor coping and problem-solving skills are more likely to resort to maladaptive behaviors, such as substance abuse, when faced with life stressors. Results of the study indicated that program students exhibited increases in decision-making skills, group process skills, and the ability to access support systems in times of stress.

Dubow, Schmidt, McBride, Edwards, and Merk (1993) developed a primary prevention program, weaving together problem-solving curriculum with emotion-focused coping. The program I CAN DO is targeted to all children rather than an at risk group, though it does include a review of common childhood stressors that may lead to risk of maladjustment. These stressors are
divorce, geographic mobility, self-care, loss of a loved one, and "being different." Within the intervention, children learn how to use a specific sequence of problem-solving skills, to seek support in times of stress, and to use "feeling helpers" (i.e., strategies to make oneself feel better) for uncomfortable stressors.

To evaluate the efficacy of the I CAN DO, researchers divided 88 fourth-grade students into two groups (n=44). One group received the program in the fall and the other in the spring semester, although both groups were tested at post-fall intervention and follow-up to the fall intervention. Instruments used measured self-efficacy, problem-solving, social support network size, and process evaluation. Results of the evaluation showed that both the fall and spring semester program students exhibited improvement in their ability to generate a repertoire of effective solutions to stressful situations compared to children who did not receive the program. Spring program effects appeared to be more consistent than the fall effects in self-efficacy, $F(1,35) = 53.51, p<.01$, problem solving, $F(1,35) = 14.03, p<.01$, and social support network size, $F(1,35) = 11.33, p<.01$. There were no program effects on the social support network size measure. In general, children named more network members (family and non-family) simply with the passage of time.

Limitations in this study include the fact that all the data were self-report measures, which may not give an accurate assessment of program effects. This intervention used elementary school students, and may not be generalizable to adolescents. Also, the social support measure in this study assessed network size and not function of the actual members. Dubow et al. (1993) suggest that the social support measure used in this study was not sensitive to important changes in the children's support, such as frequency, quality, or function. In future research, it would be helpful to appraise these variables more precisely to observe if social support as a coping strategy does indeed change as a function of an intervention.

Madden et al. (1994) developed a stress management intervention called the Coping Skills Program to assist youths to develop improved ways of managing stressful situations. As a result of newly acquired skills, adolescents would abstain from or control maladaptive behaviors such as
harmful drug use. Initially, Madden et al. implemented a pilot intervention to establish the relationship between stress, drug use, social support, and coping and to test theoretical assumptions relating to stress and coping in order to develop an effective intervention. The pilot intervention consisted of administering questionnaires to 200 year 10 students in order to measure levels of substance use, stress, social networks, and coping strategies currently used. Findings from this study indicate that many year 10 students are unfamiliar with the range of coping strategies that can be used across many stressful situations.

The Coping Skills Program identified the stressors, drug use triggers, social supports, and coping profiles of 816 Year 10 students (54% male and 46% female). Classes of these students were randomly allocated to either a Skills, Knowledge, or Control group. The program utilized techniques such as cognitive-restructuring, progressive muscle relaxation, identification of available social supports, and mental rehearsal to teach the youths new coping strategies. The program has been implemented, however results have not yet been determined.

This study effectively evaluated current individual drug use, stress levels, and coping strategies. The program identified the social support network of the adolescent, but not the extent to which the individual perceives the network as supportive. As stated elsewhere in this paper, social network measures make the assumption that having a relationship is equivalent to getting support from it (Lazarus & Folkman, 1984). This is not always the case.
Purpose of the Study

A review of the research on stress management interventions aimed at teaching adolescents to cope with stress demonstrates the lack of concentration on the social supports existing in an adolescent's life (Hains, 1994; Kiselica et al., 1994; Snow et al., 1992). The impact of the perception of social support on individuals has been clearly substantiated in the research (Cohen, 1992; Newcomb & Bentler, 1988; Windle, 1992). The concept of using stress-management programs to teach adolescents effective ways to cope with stress has slowly been developing over the past decade. Most of the methods taught to youths are those of problem-solving and emotional-regulation. Unfortunately, few programs have focused on informing youths about support systems; of both the availability and value of using supportive resources, such as family and friends, in times of stress. Focusing on teaching adolescents about support-based coping and the number of supports available to them may be an important component in preventing the detrimental effects of stress in adolescents today.

The expected effect of a stress and coping intervention program (with a focus on informing adolescents about the supports available to them and teaching them new skills to access this support) would be that participants' levels of perceived social support and their social support coping strategies will increase. This increase would be the result of new cognitive schemas about the presence of and the accessibility to support from family and friends. In addition, the adolescents would also learn a problem-solving approach to stress, in which seeking social support can be a rewarding strategy to employ.
HYPOTHESES

Some adolescent intervention programs have focused on decreasing stress and anxiety (Hains, 1992, 1995) in addition to increasing academic performance (Kiselica et al., 1994). There is a lack of knowledge about influencing levels of perceptions of social support from family and friends by educating adolescents about available support systems, and whether or not this awareness is stable across time.

**Hypothesis 1.** Perceived social support, measured by scores on the Perceived Support from Family (PSS-Fa) and Perceived Support from Friends (PSS-Fr) scales, will increase significantly more from pretest to posttest for both the Skills and Knowledge group, compared with the Control group.

**Hypothesis 2.** Perceived social support, as measured above, will be maintained at posttest levels from posttest to the 5-week follow-up for the Skills group and will be significantly greater than levels for the Knowledge group, which will decrease from posttest to follow-up, compared with the Control group. As a result of informational and experiential learning, perceptions of social support in the Skills group will be more stable over time.

Madden et al. (1994) developed a Coping Skills Program to teach Australian youth new skills to cope with stressful situations. This program was developed in response to the lack of stress interventions for adolescents that educate youth to identify available social supports and employ new coping strategies. Replication of the Madden et al. (1994) study with Canadian youth is used to test the generalizability of the Coping Skills Program and the effectiveness of the program to teach social support coping.

**Hypothesis 3.** Social support coping, as measured by the Madden et al. (1992) revision of the Ways of Coping Checklist (CQA) will increase significantly more from pretest to posttest for both the Skills and Knowledge groups as compared with the Control group.

**Hypothesis 4.** Social support coping, as measured above, will be maintained at posttest levels from posttest to the 5-week follow-up for the Skills group and will be significantly greater
than levels for the Knowledge group, which will decrease from posttest to follow-up, compared with the Control group.

Lakey and Cassady (1990) have reported that perceived support is significantly related to measures of cognitive personality variables such as self-esteem and control beliefs. Research has not yet explored the relationship between perceived support and social support coping strategies or the direction of the relationship.

**Hypothesis 5.** There will be a moderate significant positive relationship between the posttest scores for social support coping and follow-up scores of perceived social support for both the Skills and Knowledge groups. It is predicted that as students learn more social support coping strategies during the intervention and begin to employ these strategies, over time their perceptions of social support will increase.

Significance is accepted on all hypothesis at the $p < .05$ level.
METHOD

Participants

The original sample consisted of 63 adolescents, currently in grades 9 and 10 in a suburban high school. A school counsellor who assisted in organizing the stress-management intervention, recommended utilizing students from three counselling resource classes, as the intervention would fit well into the curriculum of each of the classes. The courses consisted of one Peer Counselling class, where students learn active listening skills in order to support other students. The other two classes were Life Skills (CAPP) courses, where the curriculum focuses on pertinent issues in adolescence such as sexuality, conflict-resolution, and career preparation. There were 13 students currently attending the Peer Counselling class and 25 students in each of the CAPP classes.

Because of time restraints and the difficulty obtaining commitments from adolescents to participate in the study, it was felt that the best option was to integrate the intervention into already established classes. As a result, there was no random assignment of students to a specific group in the study. Schools serve as an effective subject pool in studies involving children and adolescents. The students attended these classes at least two times per week and would be available to participate in the intervention.

Each student in all three classes received an information sheet, describing the project, who the leaders were, and details of their involvement (see Appendix A). It was indicated that their participation was purely voluntary, and each student's personal written consent was required in order for he/she to participate in the study. Parents also received a consent form describing the goals of the project, the leaders, and what information their child would be learning as a result of the study. Again, the students needed consent from their parents in order to participate. All of the students and parents completed consent forms (see Appendix B).

Of the original 13 students in the Peer Counselling class, one student moved after the initial session, and one student no longer attended class for personal reasons. Two students from one of the CAPP classes did not attend classes regularly, so were omitted from the project. The remaining 57 participants ranged in age from 13 to 16, with a mean age of 14 (SD=.66). There
were 25 males (42%) and 32 females (54%). Two participants did not specify age or sex. The majority (84%) were born in Canada, 5% were born in Europe and 3% in India. There was a higher number of parents from Indian descent (32%), though 39% were born in Canada. Ten percent of the parents were born in Europe.

**Design and Procedure**

This project was a replication of a coping skills program developed by Dr. Chris Madden (LaTrobe University, Australia). Madden's (1991) program was aimed to assist adolescents in developing improved ways of managing stressful situations and abstaining from or controlling maladaptive behaviors such as harmful drug use. Included in the program is the identification of stressors, social supports, and behavioral consequences of stress. An additional social support component was added to increase the adolescent's awareness of support systems that are available and to measure the adolescent's perception of their social support network. These outcomes were used to determine the relative efficacy of knowledge-based education (Knowledge) and skills-based education (Skills). This results of this project in Canada help to determine the transferability of these two preventative programs, a Coping Skills Intervention and a Coping Knowledge Intervention.

Researchers of all disciplines have long been aware of the importance of replication to their enterprise (e.g., Campbell & Jackson, 1979). Replication studies can be used to verify the results in quantitative research; they also test the generalizability of a study (Amir & Sharon, 1990). Although the same experiment cannot be repeated exactly by a different researcher, replication research can be powerful aides in reaching conclusions about the scientific nature of a phenomenon.

A special area where replications are utilized is in cross-cultural psychology (Amir & Sharon, 1990). The ultimate goal is the establishment of general laws of behavior across cultures. The attempt is to verify that particular generalizations made are, or are not, restricted to one specific culture (Rosenthal, 1990). As stated above, the replication of the Coping Skills Program (originally designed for intervention with Australian adolescents) in British Columbia will verify
its generalizability and transferability to a Canadian culture. If the Coping Skills Program is valid and effective in a Canadian culture, it would be invaluable as a prevention technique in teaching Canadian youth to effectively manage stress; subsequently, it is possible that rates of both alcohol and drug use would decrease. To support the transition of the program manuals from Australia to Canada, a group of students and teachers reviewed the manuals to detect differences in language usage or presentation that may result in difficulties in comprehension.

Each of the three classes was assigned a program to complete. The Peer Counselling class participated in the Coping Skills program (Skills), one CAPP class was assigned the Coping Knowledge program (Knowledge), and the other CAPP class served as a control group. The two treatment conditions were the Skills Intervention and the Knowledge intervention. The Control group completed the questionnaires only. All three groups were tested on the variables of perceived social support and coping strategies at pretest and posttest, which was week five in the program, and 3 months later at follow-up. Although Madden's program already contained questionnaires focusing on social support, two instruments were added to the program. These scales were Perceived Social Support from Friends (PSS-Fr) and Family (PSS-Fa), used to measure changes in perception of an individual's support systems.

Dependent Measures

Perceived Social Support From Family Scale (PSS-Fa). This scale was developed and validated by Procidano and Heller (1983), and is designed to measure the extent to which an individual perceives that his/her needs for support, information, and feedback are fulfilled by family members. See Appendix C. The scale consists of 20 statements concerning the subjective perception of the participants' relationships to his/her family. These statements include how the youth feels about accessing his/her family for support and also, if family members come to the youth for support, feedback, and information. In the original scale, perception of social support was measured using a yes, no, don't know format. In order to increase discriminability of response options, levels of perception of support in this study were measured by a 4-point Likert scale with 1 indicating that the statement is generally false and 4 indicating that the statement is
generally true. Thus, the scale has a range from 20 to 80 with higher scores indicating more perceived support.

The PSS-Fa was used because the scale effectively isolates the individual perceptions of social support from received social support and size or density of social network. The PSS-Fa contains items that access many areas of parent-adolescent relationships, including feelings of reciprocity by significant others to the subject. This measure was not developed for use specifically with adolescents, but for the general population ranging from youths to adults. Studies using the PSS-Fa with adolescents have shown successful validation (Gavazzi, 1994; Windle & Miller-Tutzauer, 1992). Internal consistency reliability for this scale has been demonstrated using American undergraduates (mean age =19; Procidano & Heller, 1983). Cronbach’s alpha was .90 for the PSS-Fa. Test-retest reliability over a 1-month interval was $r = .83$.

The authors demonstrated construct validity while developing the scales. In order to validate the construct of perceived support, Procidano and Heller (1983) compared perceived social support scores to other variables to which they were expected to be related. PSS-Fa was significantly negatively correlated to depression, $r = .43$, $p<.001$ and psychasthenia, $r = .33$, $p<.001$, two measures on the MMPI. There was also a significant, positive correlation between PSS-Fa and social competence, $r = .35$, $p<.001$. The PSS-Fa was also related to several social network variables, the most significant being the individuals rating of tangible support provided by family members, $r = .34$, $p<.001$.

Perceived Social Support From Friends (PSS-Fr). This scale was also developed and validated by Procidano and Heller (1983), and is designed to measure the extent to which an individual perceives that his/her needs for support, information, and feedback are fulfilled by friends. The structure of this instrument is the same as the PSS-Fa, apart from the exception that the items focus on relationships with friends instead of family. See Appendix D. The scale has a range from 20 to 80 with higher scores indicating more perceived support.

As mentioned above, the PSS-Fr was used in order to differentiate between perceived support and actual received support. There are important differences between the perception of
support from friends and the actual size of the support network. The PSS-Fr effectively separates these two concepts by focusing on relationship characteristics instead of overall descriptors of the friendship. This measure was not developed for use specifically with adolescents, but for the general population ranging from youths to adults. Studies using the PSS-Fa with adolescents have shown successful validation (Gavazzi, 1994; Windle & Miller-Tutzauer, 1992).

Internal consistency reliability was also determined for this scale using American undergraduates with a mean age of 19 (Procidano & Heller, 1983). Chronbach's alpha was .88 for the PSS-Fr. This scale was also found to possess high test-retest reliability ($r = .83$ over a 1-month interval). Like the PSS-Fa, the PSS-Fr has demonstrated construct validity by comparing the scale to related variables. PSS-Fr was significantly related to three California Psychological Inventory (CPI) scales (Gough, 1960), including social presence, $r = .51$, $p < .001$ and sociability, $r = .33$, $p < .005$. PSS-FR was also significantly negatively correlated to lack of self confidence, $r = -.43$, $p < .001$.

Coping Questionnaire for Adolescents (CQA). Madden, James, Paton, and King (1992) developed a questionnaire using an adolescent sample to measure how youths cope with stressful situations. The CQA has been adapted to adolescents from two adult coping questionnaires (a) Ways of Coping Checklist (WOCC) of Folkman and Lazarus (1984), and (b) Ways of Coping with Sports (WOCS), adapted by Madden, Summers, and Brown (1989). See Appendix E.

The scale consists of a 34-item checklist of thoughts and actions used by adolescents to cope with stress. Coping is measured on a 4-point scale with 0 indicating no use and 3 indicating use all the time. Factor analysis of the CQA has yielded both problem-focused and emotion-focused coping scales. These are Scale (1) Passive Philosophical coping, Scale (2) Problem-focused coping, Scale (3) Self-Blame, Scale (4) Denial, Scale (5) Orientation to Others, Scale (6) Self Care, Scale (7) Acting Out, Loss of Patience, and Scale (8) Composure. Under the orientation to others scale are three subscales which are added to obtain a total seeking social support score. These are (1) I talked to someone to find out more about the situation, (2) I talked to someone who could act in some way to change the situation, and (3) I asked for ideas from a
member/s of my family or a friend whom I had respect for and I could trust. There is some support for reliability of this instrument and it has high face validity (Madden et al., 1994).

Treatments

There were two treatment groups, a Skills coping group and a Knowledge coping group. Adolescents in the Skills group met for five 50-minute weekly sessions. A rationale for coping skills training was presented at the first session (i.e., learning new skills and strategies in order for adolescents to reduce stress that they experience). Students were then asked to describe "the most stressful situation that you have experienced lately." Questions and concepts within the program continuously referred back to this stressor, offering a measure of past, present, and current stress each individual was experiencing. The main treatment components were (a) educational segments concerning emotions, thoughts and how stress influences or is influenced by these, (b) acquiring different skills to reduce stress such as breathing exercises, relaxation and assertion, (c) practicing new and different ways of coping with stress and receiving feedback from the group, and (d) review of concepts learned and evaluating the effects of new coping strategies or maintenance of original strategies. Included in the educational component was information about social support networks and the advantages of accessing friends or family for support in times of stress. The format of each session was structured, following the program manual provided by Madden (1993) and discussions took place in a supportive atmosphere where the adolescents were encouraged to participate fully. Confidentiality norms were discussed and agreed upon in each group.

The Knowledge group met for 5-weekly 50 minute sessions. This program was essentially the same as the Skills program, except for the fact that no coping skills were taught, acquired, or practiced. The Knowledge group were educated, as above, on emotions, thought, and stress and received review and feedback on any changes made in coping strategies as a result of this education.

A complete treatment manual is available from Jack James, co-investigator, upon request.
Leaders

The Skills intervention sessions were co-led by a qualified counsellor within the school and an M.A. student in Counselling Psychology. Both had experience working with adolescents and leading adolescent groups. The Knowledge intervention was led by a another qualified counsellor within the school, currently teaching a CAPP class. This instructor also has extensive experience working with adolescents and groups. Before each weekly session, the leaders met to discuss the format of the session in order to ensure similarity of approach across groups.

Data Analysis

Two adolescents in the Knowledge group did not complete the follow-up questionnaires and for purposes of data analysis were dropped from the study. In the Control group, two adolescents did not complete the follow-up questionnaires, and resultantly were dropped from the study. This meant that 23 out of the 25 Knowledge group participants completed the program and 21 out of the 23 Control group participants did so. In the Control group, 7 participants did not complete the coping questionnaire at posttest and 10 at follow-up. Within the data analysis process, cases that contain incomplete data are automatically dropped; as a result, 14 out of the original 21 cases were analyzed at posttest, and 11 out of the original 21 cases at follow-up.

Descriptive statistics were calculated, providing means, standard deviations, and frequency distributions for each group. Measures of skewness, indicating whether or not assumptions of normality had been met, were examined. Randomly missing data points were replaced with overall mean values for a specific case. In the instance that missing values were concentrated in specific cases, these cases were dropped.

A two-way (Group x Time) repeated measures MANOVA, with two pre-planned nonorthogonal contrasts (pretest to posttest) (posttest to follow-up) was performed for the three dependent measures (perceived social support from family, perceived social support from friends, and social support coping) to test the hypotheses of group differences (Hypotheses 1 to 4).
Follow-up univariate ANOVA was used to examine Group x Time interactions, which indicate differential changes by group on the dependent variables. If the Group x Time univariate effects were significant, post hoc Scheffe contrasts were carried out.

A Pearson product-moment correlation matrix was calculated for pretest, posttest, and follow-up data. Hypothesis 5 was tested with a correlation coefficient for the posttest and follow-up measures of perceived social support and social support coping variables.
RESULTS

Preliminary Analysis: Group Comparability

The means and standard deviations for all groups of participants are presented in Table 1. A preliminary analysis was done using a one-way multivariate analysis of variance (MANOVA) to test for pretreatment differences among the two treatment conditions, Skills (n = 11), Knowledge (n = 25), and the Control group (n = 23) on all three dependent measures. A significant multivariate group effect was found, F(6,102) = 2.39, p = .03. Follow-up univariate analysis was significant for Perceived Social Support from Friends, F(2,53) = 5.50, p = .007, indicating pretreatment differences between the three groups on this measure. An examination of the means indicated that the Skills group was significantly higher than the Knowledge and Control group in Perception of Social Support from Friends. Results were nonsignificant for Perceived Social Support from Family and Social Support Coping measures, F < 1 respectively.

Analysis of variance (ANOVA) was used to test for group differences in age. There was no significant difference between the groups, F < 1. The variables of sex and country born, collapsed into 3 categories, were examined using separate chi-square analysis. No significant group differences were found for sex, χ²(2, n = 55) = 4.62, p = .09, or country born, χ²(2, n = 54) = 4.93, p = .29.
Table 1  
Participant Characteristics by Group

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Skills</th>
<th>Knowledge</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 11</td>
<td>n = 25(^a)</td>
<td>n = 23(^b)</td>
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<tr>
<td></td>
<td>SD: .79</td>
<td>.55</td>
<td>.31</td>
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</tr>
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</tr>
<tr>
<td>India</td>
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<td>8</td>
</tr>
<tr>
<td>Other</td>
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<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

\(^a\) two participants did not specify sex  
\(^b\) one participant did not specify sex
Hypothesized Treatment Effects on Dependent Measures

To test hypotheses 1 to 4, a two-way (Group x Time) repeated measure MANOVA, with two preplanned nonorthogonal contrasts (pretest to posttest) (posttest to follow-up) were performed for the dependent measures for the two treatment groups, Skills and Knowledge, and the Control group. The dependent measures were perceived social support from family, perceived social support from friends, and social support coping. Means and standard deviations for all three dependent measures are reported in Table 2, 3, and 4. Results are presented for each contrast.

Table 2
Means and Standard Deviations for Social Support from Families for All Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Follow-up</th>
</tr>
</thead>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Skills (n=11)</td>
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<td>48.18</td>
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<tr>
<td>Knowledge (n=23)</td>
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<tr>
<td>Control (n=14)</td>
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<td>8.63</td>
<td>53.00</td>
</tr>
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</table>

(55.27) (10.01)

Note. Figures in parenthesis represent M and SD with n = 11
Table 3
Means and Standard Deviations for Social Support from Friends for All Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Skills (n = 11)</td>
<td>60.45</td>
<td>4.85</td>
<td>58.36</td>
</tr>
<tr>
<td>Knowledge (n = 23)</td>
<td>52.21</td>
<td>7.23</td>
<td>53.29</td>
</tr>
<tr>
<td>Control (n = 14)</td>
<td>53.26</td>
<td>8.25</td>
<td>58.15</td>
</tr>
</tbody>
</table>

Note. Figures in parenthesis represent M and SD with n = 11

Table 4
Means and Standard Deviations for Social Support Coping for All Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Skills (n = 11)</td>
<td>3.73</td>
<td>2.41</td>
<td>3.55</td>
</tr>
<tr>
<td>Knowledge (n = 23)</td>
<td>3.91</td>
<td>2.50</td>
<td>4.77</td>
</tr>
<tr>
<td>Control (n = 14)</td>
<td>4.23</td>
<td>2.87</td>
<td>4.77</td>
</tr>
</tbody>
</table>

Note. Figures in parenthesis represent M and SD with n = 11
Treatment and Control Group Analysis: Pretest to Posttest for Social Support from Family and Friends and Social Support Coping

Hypothesis one predicted that from pretest to posttest the participants in the Skills and Knowledge group would report an increase in the perception of social support from family and perception of support from friends, compared with the control group. A significant multivariate Group x Time effect was found, $F(6,86) = 2.58, \ p = .024$. No significant group effect, $F(6,86) = 1.53, \ p = .18$, or time effect, $F<1$, was found.

Follow-up univariate analysis of variance (ANOVA) for each dependent variable was calculated for the Group x Treatment effect (see Table 5). Effect size (eta squared) and power were calculated and reported because of the small sample size in each group. Effect size is a measure of the magnitude of the effect that is not sensitive to sample size (Jacobsen & Traux, 1991). Therefore, there may an effect resulting from the treatment that is not indicated by the statistical significance level. Eta squared, or "shrunken R" is only one method of calculating effect size. A small effect size would be .01, a moderate effect size would be .10, and a large effect size would be .25 (Keppel, 1992).

The follow-up univariate ANOVA for the Group x Time interaction for Social Support from Family, $F(2,45) = 5.14, \ p = .01$, was significant, indicating that there was a moderate change in the perception of Social Support from Family over time that differed by group (See Table 5). Effect size was medium (.19) and the power level high (.80). Based on these significant results, a Scheffe's test for significance at .10 was used to calculate comparisons among the means for all three groups. Results indicated that for Social Support from Family, the change over time (pre to post treatment) for the Skills group compared with the Control group was not significant. In addition, the comparison between the Knowledge group and the Control group was not significant. When the means are examined, the Skills group decreases over time,
Table 5
Analysis of Variance, Effect Size, and Power Analysis for Pretest to Posttest Measures of the Dependent Measures Perception of Support from Family, Perception of Support from Friends and Social Support Coping

<table>
<thead>
<tr>
<th>source</th>
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<th>F</th>
<th>p&lt;</th>
<th>ES*</th>
<th>Power</th>
</tr>
</thead>
<tbody>
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<td><strong>PSS-Fa</strong></td>
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<td></td>
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</tr>
<tr>
<td>Group (G)</td>
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<td>.93</td>
<td>.002</td>
<td>.06</td>
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<tr>
<td>Time (T)</td>
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<td>.72</td>
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<td>.016</td>
<td>.17</td>
</tr>
<tr>
<td>GxT</td>
<td>2</td>
<td>5.14</td>
<td>.01</td>
<td>.19</td>
<td>.80</td>
</tr>
<tr>
<td>within error</td>
<td>45</td>
<td>(16.17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PSS-Fr</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>2</td>
<td>3.19</td>
<td>.05</td>
<td>.12</td>
<td>.58</td>
</tr>
<tr>
<td>Time (T)</td>
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<td>2.68</td>
<td>.11</td>
<td>.056</td>
<td>.36</td>
</tr>
<tr>
<td>GxT</td>
<td>2</td>
<td>5.51</td>
<td>.007</td>
<td>.20</td>
<td>.83</td>
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<tr>
<td>within error</td>
<td>45</td>
<td>(13.36)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CQA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>2</td>
<td>.47</td>
<td>.63</td>
<td>.02</td>
<td>.13</td>
</tr>
<tr>
<td>Time (T)</td>
<td>2</td>
<td>.67</td>
<td>.41</td>
<td>.69</td>
<td>.16</td>
</tr>
<tr>
<td>GxT</td>
<td>2</td>
<td>.39</td>
<td>.68</td>
<td>.02</td>
<td>.11</td>
</tr>
<tr>
<td>within error</td>
<td>45</td>
<td>(4.56)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Note.** Values enclosed in parentheses represent mean square errors.

*ETA squared

*a* Perception of Social Support from Family

*b* Perception of Social Support from Friends

*c* Social Support Coping
the Knowledge group does not change whereas the Control group increases. Changes were in the opposite direction to that expected (see Figure 2), however these changes were not statistically significant. In summary, results did not support hypothesis one.

Univariate ANOVA for the dependent variable Social Support from Friends revealed a significant Group x Time interaction, $F(2,45) = 5.51$, $p = .007$ (see Figure 3) indicating that the groups changed differentially from pretest to posttest on that variable. A medium effect size and high power emerged for the interaction (.20 and .83 respectively).

As above, Scheffe's test of significance at .10 was used to calculate comparisons between both the Skills and Knowledge groups and the Control group. When the Skills group and the Control group were compared, the results were not significant. Similarly, the comparison between the Knowledge group and the Control group was not significant. When the means are examined, the Skills group decreases slightly and the Knowledge group remained unchanged from pre to posttest, whereas the Control group increased (see Figure 3.), however these mean changes were not statistically significant. In conclusion, results did not support hypothesis one.

Hypothesis three predicted that scores for the amount of Social Support Coping used would increase over time for both the Skills and Knowledge group, compared with the Control group. Follow-up ANOVA for the Social Support Coping indicated a nonsignificant interaction effect, $F<1$. Effect size was .02 and power .11, supporting the result of no change over time of Social Support Coping. Therefore, results do not support hypothesis three. Means and standard deviations are presented in Table 4.
Figure 2. Mean scores for pretest and posttest measures of Perceived Social Support from Family for all groups.

Figure 3. Mean scores for pretest and posttest measures of Perceived Social Support from Friends for all groups.
Treatment and Control Group Analysis: Posttest to Follow-up for the Social Support from Family, and Friends, and Social Support Coping

Hypothesis two predicted that the level of perceived social support would be maintained at posttest levels to follow-up for the Skills group and would be significantly greater than levels for the Knowledge group. Hypothesis two also predicted that perceived social support levels would decrease from posttest to follow-up for the Knowledge group, whereas the Control group would not change. A significant multivariate Group x Time effect was found, $F(6,80) = 2.27$, $p = .044$, however no significant group effect, $F(6,80) = 1.20$, $p = .31$, or time effect emerged, $F(2,42) = 1.76$, $p = .17$.

Follow-up univariate analysis of variance was performed for each dependent variable for the Group x Treatment effect. Means and standard deviations are presented in Table 2 and 3. For the Social Support from Family variable the results showed no significant interaction, $F<1$ (see Table 6), indicating that over time the participants did not differentially by group perceive an increase in social support from family. Effect size and power levels were both low for the interaction (.10 and .47 respectively).

For the Social Support from Friends variable there was a significant interaction effect, $F(2,42) = 3.90$, $p = .03$ (see Table 6) indicating that the groups changed differentially from posttest to follow-up. There was a medium effect size (.16) and medium power (.67).

Scheffe's test of significance at .10 was used to calculate comparisons between both the Skills and Knowledge groups and the Control group for the Social Support from Friends variable. The result of the comparison of the Skills and Knowledge groups was not significant. In addition, both the comparisons of each treatment group and the Control group were not significant. Examination of the means revealed that the Skills group maintained posttest levels at follow-up, whereas the Knowledge group increased from
Table 6
Analysis of Variance, Effect Size, and Power Analysis for Posttest and Follow-up Measures of the Dependent Variables

<table>
<thead>
<tr>
<th>source</th>
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<th>F</th>
<th>p&lt;</th>
<th>ES*</th>
<th>Power</th>
</tr>
</thead>
<tbody>
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<td><strong>PSS-Fa</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
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<td>1.32</td>
<td>.28</td>
<td>.06</td>
<td>.27</td>
</tr>
<tr>
<td>Time (T)</td>
<td>2</td>
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<td>.08</td>
<td>.07</td>
<td>.41</td>
</tr>
<tr>
<td>GxT</td>
<td>2</td>
<td>.47</td>
<td>.63</td>
<td>.02</td>
<td>.12</td>
</tr>
<tr>
<td>within error</td>
<td>42</td>
<td>(23.67)</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td><strong>PSS-Fr</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>2</td>
<td>1.33</td>
<td>.27</td>
<td>.06</td>
<td>.27</td>
</tr>
<tr>
<td>Time (T)</td>
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<td>.02</td>
<td>.89</td>
<td>.0004</td>
<td>.04</td>
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<tr>
<td>GxT</td>
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<td>3.90</td>
<td>.03</td>
<td>.16</td>
<td>.67</td>
</tr>
<tr>
<td>within error</td>
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<tr>
<td><strong>CQA</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>2</td>
<td>.76</td>
<td>.47</td>
<td>.03</td>
<td>.17</td>
</tr>
<tr>
<td>Time(T)</td>
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<td>.50</td>
<td>.01</td>
<td>.09</td>
</tr>
<tr>
<td>GxT</td>
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<td>2.49</td>
<td>.09</td>
<td>.11</td>
<td>.47</td>
</tr>
<tr>
<td>within error</td>
<td>42</td>
<td>(3.06)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Values enclosed in parentheses represent mean square errors.

*ETA squared

α Perception of Social Support from Family

β Perception of Social Support from Friends

γ Social Support Coping
posttest to follow-up. The Control group decreased over time (see Figure 4). However the mean differences were not statistically significant when specific group contrasts were made. In summary, hypothesis two was not supported for social support from family and friends.

Hypothesis four predicts that the amount of social support coping (scores on the CQA) would maintain posttest levels at follow-up for the Skills group and would be significantly greater than levels for the Knowledge group, which would decrease from posttest to follow-up, compared with the Control group. However, the interaction effect approached significance, $F(2,42) = 2.50$, $p = .09$. These results indicate that the groups did not change differentially from posttest to follow-up. A moderate effect size (.11) and moderate power (.47) indicates that there may have been a differential change in social support coping over time, but the low power reduces the ability to detect an interaction. Although the groups were not significantly different from one another and did not change overall from posttest to follow-up, examination of the means revealed that the Skills group increased from posttest to follow-up. In summary, results partially support the hypothesis.

**Relationship between Social Support from Family and Social Support Coping**

To test hypothesis five, a Pearson product-moment correlation matrix for posttest and follow-up was calculated for the Skills and Knowledge groups combined. Results showed a moderate and significant relationship between follow-up scores of perceived social support from family and posttest scores of social support coping ($r = .40$, $p=.005$). Therefore, greater use of social support coping at posttest was associated with higher levels of perceived social support from family at follow-up for the combined treatment groups. There was no significant relationship between follow-up scores of perceived social support from friends and posttest measures of social support coping ($r = .14$, $p = .34$). Correlations are reported in Table 7.
Figure 4. Mean scores for posttest and follow-up measures of Perceived Social Support from Friends for all groups.
### Table 7
**Correlation Matrix of Dependent Variables for the Treatment Groups at Posttest and Follow-up**

<table>
<thead>
<tr>
<th></th>
<th>PSSFat2</th>
<th>PSSFat3</th>
<th>PSSFrt2</th>
<th>PSSFrt3</th>
<th>CQAt2</th>
<th>CQAt3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSSFat2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>--</td>
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<tr>
<td>PSSFat3</td>
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<td>PSSFrt2&lt;sup&gt;b&lt;/sup&gt;</td>
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<td>.21</td>
<td>--</td>
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<tr>
<td>PSSFrt3</td>
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<td>.38**</td>
<td>.74**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CQAt2&lt;sup&gt;c&lt;/sup&gt;</td>
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<td>.40**</td>
<td>.25</td>
<td>.14</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>CQAt3</td>
<td>.46**</td>
<td>.32*</td>
<td>.18</td>
<td>.23</td>
<td>.58**</td>
<td>--</td>
</tr>
</tbody>
</table>

**Note.** n = 34

<sup>a</sup> Social Support from Family

<sup>b</sup> Social Support from Friends

<sup>c</sup> Social Support Coping

*<sup>p</sup><.05,  **<sup>p</sup><.01
DISCUSSION

This study examined the impact of a stress-management intervention on social support coping in adolescents and their perceptions of social support from family and friends. In addition, the relationship between perceptions of social support and use of social support coping strategies was investigated. The objective of the intervention was to increase the adolescents awareness and use of social support coping skills and to influence their perceptions of the social support they receive from their family and friends. The hypothesis that predicted an increase in perceptions of social support from family and friends for both the treatment groups from pretest to posttest was not supported. The hypothesis that predicted maintenance of these levels from posttest to follow-up was not supported. The same results occurred for the hypothesis that social support coping would increase from pretest to posttest and would be maintained at posttest levels at follow-up. A final hypothesis, that there would be a significant, positive correlation between social support coping and perception of social support levels of the treatment groups, was supported.

The results were calculated in two ways, by statistical significance and effect size and power. Each dependent variable is discussed in terms of statistical significance and effect size and power followed by a discussion of treatment implications and limitations. Finally, suggestions for further research are considered.

Important to this discussion is a description of the three groups involved. There was no random assignment of classes or adolescents to one of the three program groups. Nonrandomization may result in a systematic bias of the results by known or unknown extraneous variables. The Skills group was composed of a Peer Counselling class, where each of the students had previously been interviewed to become part of the counselling class. The students were trained in active listening and communication, relationship issues, and had advanced education in concerns such as stress and substance abuse. The class was a smaller group, where the students were more familiar with one another than in a normal size class. The Knowledge group was comprised of a Career and Personal Planning (CAPP) class. The curriculum in this class included career awareness and planning, personal development (e.g., mental well-being, substance abuse
prevention), and work experience. The Control group was also a CAPP class. This class differed from the Knowledge group that they were a class of high-achievers, attaining high grades and becoming involved in out of school activities such as groups and teams. The nature of each of these three groups and inherent differences may have affected the results of this study.

**Perception of Social Support from Family**

In hypothesis one it was predicted that the perception of social support from family would increase from pretest to posttest for both the Skills and Knowledge group, compared with the Control group. Although univariate analysis revealed a significant interaction, follow-up comparisons were not significant. When the group means were examined, the Skills group decreased over time, whereas the Knowledge group stayed the same. The means of the Control group increased over time, the opposite to what was expected. Moreover, the change from pretest means to posttest means for two treatment groups was minimal, indicating that treatment had no detectable effect. The Control group means increased, due possibly to a pretest sensitization; the group means increased simply because of the experience of taking the test twice. In addition, the Control group class was a group of high achievers, obtaining higher than average grades and active within the schools extracurricular activities. These characteristics may be reflective of the familial support they receive, or may have contributed to the group learning something about social support simply by answering the questionnaires repeatedly.

An explanation for the lack of change in the expected direction in the Skills group and the Knowledge group may indicate a stability of perceptions of support from parents and siblings. Although research has shown that significant sources of social support for reducing vulnerability to stress are family members (McFarlane, 1992), the sense of constancy of support may be internalized at an early age and not malleable at later stages of development. This is congruent with Ainsworth's (1989) notion of a secure base that is internalized during childhood. Whether or not a child internalizes a sense of security and support from family, the schema or cognitive construct may not be influenced by a simple stress intervention aimed at helping increase awareness of possible support systems. Although the Skills group did receive more skills training in accessing
social support from family than the Knowledge group, it was not sufficient to influence internal thoughts and feelings about familial relationships. In addition, the time lapse of 5 weeks between pre and post measures, may not have been of a significant length of time to observe any change.

Hypothesis two predicted that perceived social support from family scores would be maintained at posttest levels from posttest to the 6-week follow-up for the Skills group, and would be greater than the Knowledge group, which would decrease from posttest to follow-up. There was no predicted change for the Control group. Results were not significant at the univariate level. Effect size and power were low, supporting the outcome of no change over time.

Although the perception of social support from family initially fluctuated, there was no stable influence of the treatment over time. As was stated above, the perceived support from family may be a stable characteristic that is not significantly influenced at a later age or may be affected by interventions working with both adolescents and their families. Clearly, the intervention used in this study was deficient in information and structure to significantly impact perceptions of social support from family.

Perception of Social Support from Friends

In hypothesis one it was predicted that the perception of social support from friends would increase from pretest to posttest for both the Skills and Knowledge group, compared with the Control Group. Univariate results indicated a significant Group x Time effect, though follow-up comparisons revealed no significant differences between the treatment and Control groups. When the means are examined, the Skills group decreased slightly, the Knowledge group means are maintained from pretest to posttest, whereas the Control group means increased. These results were opposite to what was expected. In summary, hypothesis one was not supported. There may be several explanations for these results. An examination of the means revealed that the Skills group experienced a higher level of social support from friends at pretest. A MANOVA used to test pretreatment differences between groups indicated a significant difference between the groups at pretest, supporting this observation. The Skills group means were maintained at posttest and follow-up. Considering that this class was a peer-helping class, the adolescents would be familiar
with the availability of friends for social support, so they may not have benefited from treatment. In other words, a ceiling effect may have been reached for this group, indicating a certain level above which observations cannot be made. One must use this conclusion with caution as there was indeed room for improvement in the Skills group. The maximum score on the Social Support from Friends measure is 80, and the Skills group maintained at 60 from pretest to follow-up.

Again, the Control group may have experienced pretest sensitization, which may explain the increase in means. Or simply knowing they were part of a study and wanting to do well (the Hawthorne effect) may have influenced their performance. The posttest means were at the level of the Skills group, indicating that events may have occurred within the 5 weeks of treatment to influence the scores. For instance, the students in all three groups were in the same grade and may have shared ideas with friends outside of class. Finally, it has been suggested that in cognitive behavioral interventions, significant results or change takes at least 6 weeks to occur (Meichenbaum, 1985). This explanation can be applied to both the treatment groups from pretest to posttest.

Hypothesis two predicted that perceived social support scores would be maintained at posttest levels from posttest to the 6-week follow-up for the Skills group, and would be greater than the Knowledge group, which would decrease from posttest to follow-up. There was no predicted change for the Control group. Although statistical results indicated a significant interaction (Group x Time effect), follow-up comparisons of differences between the groups over time were insignificant. The observed means showed the Skills group maintaining their posttest mean at follow-up, while the Knowledge group mean increased slightly. The Control group decreased from post to follow-up. Therefore, hypothesis two was partially supported. It was expected that the Skills group scores would be higher compared to the other groups, though the fact that the adolescents had been trained in peer helping may have influenced the scores. The means for the Knowledge group may have increased slightly due to treatment effects over time, indicating that it took some time to integrate the information about friend support. The Knowledge
group means at follow-up were lower than those of the Skills group, which was expected due to differing treatment conditions.

Social Support Coping

Hypothesis three predicted that the two treatment groups would increase significantly in Social Support Coping from pretest to posttest compared with the Control group. Results indicated that the groups did not change differentially over time. Hypothesis three was not supported, indicating that the treatment groups did not increase Social Support Coping over time. The lack of change from pretest to posttest may be explained by the research indicating that cognitive-behavioral interventions should be at least 6 weeks to be effective or the scale used may not have adequate content validity as it only has 3 items.

Hypothesis four predicted that social support coping scores would be maintained at posttest levels from posttest to the 6-week follow-up for the Skills group, and would be greater than the Knowledge group, which would decrease from posttest to follow-up. The Group x Time ANOVA only approached significance. Again, results indicated that the groups did not change differentially from posttest to follow-up. However a moderate effect size and low power indicates that a larger sample or a more reliable measure may have resulted in a significant effect. When the means were inspected, it was found that the Skills group recorded an increase from posttest to follow-up, whereas the Knowledge group maintained at the posttest score. As was stated above, there was no increase in Social Support Coping for the Skills group for pretest to posttest, and then an increase occurred from posttest to follow-up. Although this pattern does not coincide with the hypothesis, it may be explainable. The Skills group may have taken longer to integrate support coping behaviors, and over the follow-up phase, were able to do so. This does not explain why the Knowledge group increased in coping behaviors from pretest to posttest and maintained at follow-up. Possibly just receiving the information about different ways of coping, including accessing social support may have been beneficial.
Perception of Social Support and Social Support Coping Relationship

The final hypothesis in this study states that there will be a moderate significant positive relationship between the posttest scores for social support coping and the follow-up scores of perceived social support for both of the treatment groups. This relationship was supported by a moderate correlation for perceived social support from family, but was not supported for perceived support from friends. These results are congruent with Windle's (1992) study that found that there was a moderate and significant relationship between social support from family and delinquency but no relationships between peer relationships and delinquency. In addition, Gavazzi (1994) found there was a stronger relationship between perceived support from family and identity than perceived support from friends and identity. One possible conclusion from the present study may be that the adolescents used more social support coping strategies with family members than with their friends and as a result, may have perceived more support from their families.

Although this study supports the existence of a relationship between perceived Social Support and Social Support Coping, it is difficult to ascertain which of these two concepts or characteristics precedes the other. When a child perceives that he/she has more support from family or friends, does this child consistently seek support from others to cope with stress, or does seeking social support establish or reinforce feelings of perceived support. In addition, the internalized perception of support from family may be different from the perception of support from friends. In adolescence, peer relationship importance is at its peak, though these friendships are often transient whereas family relationships are more permanent. Therefore, even though adolescents may turn to peers for assistance during stressful times, their perception of support may be less than what they experience with their family. This concept is supported by the correlational data presented in this study.

Implications

Research implications. The results of this study raise the issue of the validity and reliability of the Coping Questionnaire for Adolescents in obtaining a measure of social support coping strategies. Because it is a 3-item self-report measure, it may not be an adequate representation of
the social support strategies employed. The development of a measure that represents a broader domain of social support coping strategies may be required. For example, a measure that is represented by larger subscales or includes input about behavior from significant others would be useful.

Research with adolescents and children can be challenging because the ideal place to study them is in schools, and this can inhibit randomization and voluntary involvement of each participant. For this study it would have been better to have the same leaders for each group to ensure generalizability of material taught and to have randomly assigned individuals or classes to groups. This may have resulted in more reliable results and less participant effects. In addition, attrition rates for adolescents in this study were high. Use of the same leaders for each group to supervise program participation and completion may have circumvented this problem.

Replication research is supported throughout the research community as a way to generalize a study to another population or to verify results. Though it can be a powerful research aid, it is difficult to establish the same experimental conditions a second time. In this study, replication of the Coping Skills program (Madden et al., 1994) was valuable to test the programs generalizability to Canadian students and to observe how the adolescents reacted to a stress-management intervention. From this research, we may be able to develop other interventions that are tailored to Canadian adolescents and their needs.

**Theoretical implications.** Results from this study do not support the hypothesis that the perception of social support is a cognitive personality variable that can be influenced by external interventions (Lakey & Cassady, 1990). The perceptions of social support from family and friends did not seem to be influenced by treatment alone. However, this finding may be an indication of lack of appropriate treatment rather than a disconfirmation of theory. Results do tend to support newer theories stating that family social support is consistent with security from family relationships formed over time (Ainsworth, 1989; McFarlane et al., 1995).

This research provides limited support for the expectation that cognitive interventions can be effective in teaching adolescents social support coping strategies in order to deal with stress. In
the sessions themselves the adolescents eagerly learnt new skills in order to cope with difficult life events. Although results of social support coping were not statistically significant, the reported means did change in the expected direction and were higher at follow-up than at pretest for the Skills group.

**Implications for counselling.** Results indicate that attempting to increase perceptions of support within an individual may be difficult. Although adolescents are taught to access more support from their family and friends in times of stress, this may be difficult to put into practice. For instance, if a parent does not know how to respond to their child's needs, the interaction may feel futile to the adolescent. Or the adolescents may not have the communication skills to approach a friend in a non-intimidating fashion. Interventions should focus on the whole family, or significant relationships if possible, and take into account that perceiving support is a dynamic within a relationship of two or more people.

As a leader of a group in this study, I watched the adolescents respond positively to the coping strategies that were being taught. They seemed to welcome new approaches to deal with stress and were enthusiastic when practicing new skills (e.g., role plays). Some adolescents were reluctant to try new coping strategies for fear of looking foolish in the eyes of their peers, though after several sessions, were more receptive to thinking about alternate ways of coping with stress. Others seemed reassured by the fact that they themselves could employ strategies to deal with personal, stressful issues. Unfortunately, the sessions seemed to short (they fit into one class period) and the intervention itself could have been extended to address the concerns the adolescents did have and to allow more time for processing the new information.

I believe that adolescents respond to and benefit from cognitive-behavioral interventions. In session, the adolescent may welcome different strategies to deal with stress and need to be taught effective coping skills. If current, less effective coping strategies are normalized and new relationship strategies are encouraged and practiced within a safe environment, the adolescent develops a sense of self efficacy, which is this base of internalizing support systems.
Limitations

There are several factors that limit the generalizability of this study. First, the students were not randomly assigned to groups, meaning that previously formed classes were used. Due to this fact, there may be common characteristics among the adolescents that cannot be accounted for. The sample size used was small, which may limit the power of the study and may increase the possibility of a Type II error. In addition, some gender differences may have occurred and influenced the results; the sample size was too small to test this. The mean adolescent age was 14, the majority of students were of European and Indian descent, and the school is situated in a large urban city. As a result, findings may not generalize to other children and adolescents in other schools. In the present study, there was a limited set of measures used that may not have accounted for extraneous variables or personality characteristics influencing the results. Each group had a different group leader. As a result, the same material may have been presented, interpreted and used differently within each group. Another limitation is that pretest-posttest-follow-up sensitization may have been present because the same instruments were used at all three time periods. Pretested participants may respond differently to treatment measures than unpretested participants. Finally, because some of the students were friends or in other classes together, they may have discussed the program or implications of the material learned which may have influenced the results.

Future Research

The findings from this study support the need for further research in several areas. More research is needed on the perception of social support to ascertain if this concept is indeed a cognitive characteristic related to the self that can be externally influenced in later childhood and adolescence. In particular, it is important to study the effects of perceptions of others in relation to the self (is the perception of social support directly related to self-concept) and whether we can influence perceptions of support by impacting the sense of self. Upon design of an intervention focusing on the perceptions of social support, it may be useful to employ a variety of different
measures to detect influences and relationships of perceptions of support with other personality variables.

The development of more reliable social support coping questionnaires is another area for further research. Finally, future research is needed to develop effective stress interventions for adolescents that aid in preventing unhealthy levels of stress and deviant behaviors in children and adolescents. Early interventions may act in preventative ways for later years in adolescence. Two areas of importance are the developing sense of self and cognitions that exist with and influence this sense and creating methods to teach children about support seeking behaviors (role plays, family counseling).
REFERENCES


Appendix C  Perception of Social Support from Family Questionnaire

The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with their families. For each statement there are four possible answers: Generally FALSE, More FALSE than true, More TRUE than false, Generally TRUE. Please circle the corresponding answer you choose for each item.

<table>
<thead>
<tr>
<th>Generally FALSE</th>
<th>More FALSE than true</th>
<th>More TRUE than false</th>
<th>Generally TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4</td>
<td>1. My family gives me the moral support I need.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>2. I get good ideas about how to do things or make things from my family.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>3. Most other people are closer to their family than I am.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>4. When I confide in the members of my family who are closest to me, I get the idea that it makes them uncomfortable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>5. My family enjoys hearing about what I think.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>6. Members of my family share many of my interests.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>7. Certain members of my family come to me when they have problems or need advice.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>8. I rely on my family for emotional support.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>9. There is a member of my family I could go to if I were just feeling down, without feeling funny about it later.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>10. My family and I are very open about what we think about things.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>11. My family is sensitive to my personal needs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>12. Members of my family come to me for emotional support.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>13. Members of my family are good at helping me solve problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>14. I have a deep sharing relationship with a number of members of my family.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>15. Members of my family get good ideas about how to do things or make things from me.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>16. When I confide in members of my family it makes me feel uncomfortable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>17. Members of my family seek me out for companionship.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>18. I think that my family feels that I am good at helping them to solve problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>19. I don't have a relationship with a member of my family that is as close as other people's relationships with family members.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 2 3 4</td>
<td>20. I wish my family were much different.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D  Perception of Social Support from Friends Questionnaire

The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with friends. For each statement there are four possible answers: Generally FALSE, More FALSE than true, More TRUE than false, Generally TRUE. Please circle the corresponding number you choose for each item.

<table>
<thead>
<tr>
<th>Generally FALSE</th>
<th>More than FALSE</th>
<th>More than true</th>
<th>Generally TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. My friends give me the moral support I need.
2. Most other people are closer to their friends than I am.
4. Certain friends come to me when they have problems or need advice.
5. I rely on my friends for emotional support.
6. If I felt that one or more of my friends were upset with me, I'd just keep it to myself.
7. I feel that I'm on the fringe in my circle of friends,
8. There is a friend I could go to if I were just feeling down, without feeling funny about it later.
9. My friends and I are very open about what we think about things.
10. My friends are sensitive to my personal needs.
11. My friends come to me for emotional support.
12. My friends are good at helping me solve problems.
13. I have a deep sharing relationship with a number of friends.
14. My friends get good ideas about how to do things or make things from me.
15. When I confide in friends, it makes me feel uncomfortable.
16. My friends seek me out for companionship.
17. I think that my friends feel that I am good at helping them solve problems.
18. I don't have a relationship with a friend that is as intimate as other people's relationships with friends.
19. I've recently gotten a good idea about how to do something from a friend.
20. I wish my friends were much different.
Appendix E  Coping Questionnaire for Adolescents

Ways of Coping In Stressful Situations

In this section you are asked about the different ways you coped in the situation you described on the red page to see if you used any of the styles that are listed below.

Circle a number below to show how often you have used each of the following ways to cope with the situation you described on the red page. Think about the stressful situation you described before and then ask yourself if you used the way of coping below to cope with that situation. Make sure you answer ALL QUESTIONS, but only circle ONE NUMBER for EACH QUESTION.

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I just set my mind on what I had to do next - the next step.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I tried to change the mind of the person in control of the situation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I tried to eat well</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I talked to someone to find out more about the situation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I had angry thoughts about myself and told myself what I should and shouldn’t do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I tried to understand how others felt about, or would feel about the situation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I tried not to make a decision yet; I waited to see what choices I might have.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I hoped something fantastic would happen to make the situation right for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I let people know what I needed or wanted.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I went on as if nothing had happened.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I tried to keep my feelings to myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I tried to believe positive or good things about myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I was angry with the person(s) who caused the problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I felt better as I changed how I felt about myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I tried to be or stay happy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I made a plan of action and followed it through.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I realized I had caused the problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I tried to see the funny side of things.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I did not use</td>
<td>I used sometimes</td>
<td>I used quite a bit</td>
<td>I used all the time</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I came out of the situation in a better way than I went into it.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>I talked to someone who could act in some way to change the situation.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>I tried to get plenty of sleep.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>I tried to make myself feel better by eating, drinking alcohol, smoking, using drugs or medications.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23</td>
<td>I found something new and I felt better about the situation; I found new faith.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>I tried to think of or help others who were in need of help.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>I didn't let the situation get to me; I made a decision not to think too much about it.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26</td>
<td>I asked for ideas from a member/s of my family member or a friend, whom I had respect for or could trust.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>I tried to relax and not be uptight.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28</td>
<td>I kept others from knowing how bad things were.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29</td>
<td>I made myself not worry or be upset by the situation.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>30</td>
<td>I tried to be strong or physically fit.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>31</td>
<td>I stood up for myself by fighting for what I wanted.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>32</td>
<td>I knew what I had to do so I made a great effort to make things work.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33</td>
<td>I made a promise to myself that the situation would change next time.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>34</td>
<td>I wished that the situation would go away or somehow finish.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35</td>
<td>Other ... (I coped in another way not listed above)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>